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University of the Witwatersrand

Health consciousness, environmental concern and animal welfare as key predictors of consumers' locus of control and attitudes towards meat consumption: A case of the Generation Y cohort, in South Africa

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In the

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At the

UNIVERSITY OF THE WITWATERSRAND

2019

Supervisor: Dr Norman Chiliya



DECLARATION

I, Mohammed Khan declare that this project is my own work. This research project will be submitted in partial fulfilment of the requirements for the Master of Commerce degree in the field of Marketing at the University of the Witwatersrand, Johannesburg. It has not been submitted previously for any degree or examination at this or any other University**.**

I further declare that:

- ❑ I am aware that plagiarism (the use of someone else's work without their permission and/or without acknowledging the original source) is wrong.
- ❑ I have followed the required conventions in referencing the thoughts and ideas of others.
- ❑ I understand that the University of the Witwatersrand may take disciplinary action against me if there is a belief or proof that this thesis is not my own unaided work or that I have failed to acknowledge the source of the ideas or words in my writing.

I recognise that it was my responsibility to conduct this research in an ethical manner and according to guidelines of the University of the Witwatersrand, and according to any laws or legal frameworks that may apply, as well as according to the norms and expectations of the Marketing discipline.

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Signature _____

Date _____

Abstract

The twentieth-century dietary evolution has resulted in livestock being used as the primary source of protein in many countries. This has various implications on the wellbeing of humans, animals, and planet earth itself. The choices consumers make regarding food not only affect our personal health, but it also directly affects the wellbeing of our current ecosystems where modern meat production systems place a worrying burden on the environment. Sustainable consumption practice is often a result of two main driving forces, the first being individual or health (egoistic) motives and the second being animal welfare and environmental concern (altruistic) motives. The growing demand for meat products worldwide is unsustainable and there is a clear gap between our responsible intentions as citizens of the world and our hedonic needs as consumers referred to as the 'Citizen-Consumer' gap. Experts argue that technological innovations and more efficient production methods would serve as a future solution for the environmental and social implications of the livestock industry however current scholars emphasise that a technological fix will not be sufficient and that it is imperative for society to undertake a behavioural fix, such as lowering meat intake and discovering more sustainable means of protein consumption

Consequently, the purpose of this study is to assess health consciousness, environmental concern and animal welfare as key predictors of consumers' locus of control and attitudes towards meat consumption among university students, in Johannesburg, South Africa. The study used a design that was quantitative in nature, which resulted in the researcher employing a deductive approach, using a positivistic method. Data was collected by means of a survey questionnaire and was used to test the hypotheses. By means of Partial Least Squares – Structural Equation Modeling (PLS-SEM), the significance of the hypotheses statements was determined from a sample of 172 students enrolled at the University of the Witwatersrand, Johannesburg, South Africa. The findings generated by SmartPLS 3 statistical software revealed that health consciousness was the key predictor of external locus of control and that external locus of control had the most significant relationship with consumers' attitude toward meat consumption, as compared to the second mediator variable – internal locus of control.

It is anticipated that the findings of this study will contribute to both theory and practice in modern society, and it is trusted that the findings of this study will greatly inform future research endeavours.

Keywords: PLS-SEM, Locus of Control, Johannesburg, South Africa, Students, SmartPLS 3

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CHAPTER ONE: INTRODUCTION AND BACKGROUND

The twentieth-century dietary evolution has resulted in livestock being used as the primary source of protein in many countries, which has various implications on the wellbeing of humans, animals, and planet earth itself (Boer, Scholsler, & Aiking, 2017). A study conducted in Germany mentions that experts in the field of agriculture and food systems have warned that these implications are likely to impact global food security in a negative manner and that a transition toward a reduced meat diet is essential to the sustainability of the planet as a whole (Boer, Scholsler, & Aiking, 2017). Hoek, Luning, Stafleu and Graaf (2004), contend that the choices consumers make regarding food not only affect our personal health, but it also directly impacts the wellbeing of our current ecosystems where modern meat production systems place a worrying burden on the environment. This burden is not only associated with the increased levels of pollution in the air, water and soil, but also with the energetically inefficient conversion of animal feed into meat: ranging from three to ten kilograms of grain to ultimately produce only one kilogram of meat (Hoek, Luning, Stafleu, & Graaf, 2004). In the Western world, research indicates that moral and ethical beliefs are viewed as primary reasons to potentially avoid meat consumption, inclusive of animal welfare concerns and rejections regarding the killing of animals (Hoek, Luning, Stafleu, & Graaf, 2004). In a similar vein, Lea and Worsley (2001), argue that health concern is not the only influencer of negative attitudes towards meat consumption, but that animal welfare and environmental issues also play an important part toward the formation of consumers' attitudes towards meat consumption, with other reasons usually having less importance on negative meat consumption attitudes in the Western context.

Existing literature suggests that sustainable consumption practice is often a result of two main driving forces, the first being individual or health (egoistic) motives and the second being animal welfare and environmental concern (altruistic) motives (Michaelidou & Hassan, 2008; Ronquest-Ross, Vink, & Sigge, 2015; Graca, Calheiros, & Oliveira, 2015; Lea & Worsley, 2001). Sans and Combris (2015), argue that urbanisation and economic development over the last fifty years has led to a substantial surge in animal-based protein consumption whereby they contend that within this time frame of fifty years, the average global annual meat consumption has increased from 23.1 kilograms per person in 1961 to 42.2 kilograms per person in 2011. In addition, it is claimed that during the last twenty years, developing countries have also

undertaken a surge of meat consumption due to the livestock revolution (Sans & Combris, 2015). A study conducted on 'Food consumption changes in South Africa since 1994' emphasises the fact that a variety of past and current food related studies imply that South Africa's consumption is increasingly shifting toward a more western orientated diet (Ronquest-Ross, Vink, & Sigge, 2015). According to the United States Department of Agriculture and Foreign Agriculture Service, South Africa consumes an estimated amount of 2.9 million tons of meat (poultry, beef and pork) per annum where at least sixty percent of total meat consumption is represented by poultry meat (Esterhuizen, 2015). Esterhuizen (2015) further mentions that over the last two decades, increased average income alongside steady economic growth in South Africa has led to skyrocketing meat consumption levels whereby a large number of South African consumers have moved towards protein-filled diets. In addition, it is approximated that in the year of 2014 the South African consumers spent R165 billion on meat products, representing one third of total expenditure on food, as opposed to ten years prior where South Africans spent R46 billion on meat products, representing about one quarter of total food expenditure (Esterhuizen, 2015). Thus, it is clear that meat consumption in the South African context is on the rise and will continue to do so in the near future, making it a highly valuable area of study for academic, policy and industry related purposes.

1.1 Problem Statement and Research Gap

The growing demand for meat products worldwide is evidently unsustainable. Reducing the levels of meat consumption appears to something that is inevitable for the benefit sake of future human, environmental and animal wellbeing as a whole (Graca, Calheiros, & Oliveira, 2015). However, an important question is whether modern consumers can be viewed as reliable and dependable associates in achieving this ever so necessary shift in meat consumption patterns (de Bakker & Dagevos, 2012). With that being said, the literature suggests that there is a clear gap between our responsible intentions as citizens of the world and our hedonic needs as consumers (Hoek, Luning, Stafleu, & Graaf, 2004; de Bakker & Dagevos, 2012). This gap is often referred to as the 'Citizen-Consumer' gap. Initially, experts argued that technological innovations and more efficient production methods would serve as a future solution for the environmental and social implications of the livestock industry and global food security regarding the unsustainable meat consumption problem the world is currently facing, however current scholars emphasise that a technological fix will not be sufficient and that it is imperative for society to undertake a behavioural fix such as lowering meat intake and discovering more sustainable means of protein consumption (de Bakker & Dagevos, 2012). The Theory of

Planned Behavior developed by Icek Ajzen, allows us to predict behaviour and intentions based on attitude, subjective norm and perceived behavioural control with respect to the behaviour itself (Ajzen, Consumer attitudes and behavior: the theory of planned behavior applied to food consumption decisions, 2015). Hence, the analysis of consumer attitudes towards meat consumption will provide value-able insight toward the factors that may influence a necessary behavioural fix within meat consumers.

It is also essential to note that, although there is a vast array of theoretical contributions made by international scholars regarding meat consumption practice and consumer attitudes towards meat consumption and on the various influencers of meat consumption (both positive and negative), there is a scarcity of research studies that have provided insight on consumer attitudes towards meat consumption in South Africa as well as the mediating relationship of locus of control on consumer meat consumption attitudes. Previous researchers in the context of South Africa emphasised on the changes in food consumption in South Africa post 1994 (Ronquest-Ross, Vink, & Sigge, 2015); consumer perspectives of the South African red meat classification system (Vermeulen, Schonfeldt, & Pretorius, 2015); and a consumer oriented study of the South African beef value chain (Labuschagne, Louw, & Ndanga, 2011) with virtually zero studies conducted on consumers' attitudes towards meat consumption. This presents a massive research gap that needs to be addressed. Furthermore, there is a limited number of studies that assess meat consumption attitudes through the use of health consciousness, environmental concern and animal welfare as predictor variables. More importantly, there is a definite lack of studies that have incorporated locus of control in consumption attitude studies let alone the use of internal locus of control and external locus of control as separate mediating variables of the relationship between health consciousness, environmental concern, animal welfare and attitudes towards meat consumption.

1.2 Purpose of Study

Primary Objective: To assess health consciousness, environmental concern and animal welfare as key predictors of consumers' locus of control and attitudes towards meat consumption.

1.2.1 Theoretical Objectives

This study aims to review literature on the following:

- Theory of Consumption Values.

- Cognitive Dissonance Theory
- Health consciousness.
- Environmental concern.
- Animal welfare.
- External locus of control.
- Internal locus of control.
- Consumers' attitudes towards meat consumption.

1.2.2 Empirical Objectives

Given the purpose of the study, the following empirical objectives were developed:

- To assess if there is a positive relationship between health consciousness and internal locus of control.
- To determine if the relationship between health consciousness and external locus of control is negative.
- To evaluate whether there is a positive relationship between environmental concern and internal locus of control.
- To assess if there is a negative relationship between environmental concern and external locus of control.
- To study whether there is a positive relationship between animal welfare and internal locus of control.
- To assess if there is a negative relationship between animal welfare and external locus of control.
- To determine if the relationship between internal locus of control and attitudes towards meat consumption is positive.
- To examine whether there is a positive relationship between external locus of control and attitudes towards meat consumption.

1.3 Research Questions (RQ)

RQ1: Is there a positive relationship between health consciousness and internal locus of control?

RQ2: Is there a negative relationship between health consciousness and external locus of control?

RQ3: Is the relationship between environmental concern and internal locus of control positive?

RQ4: Is the relationship between environmental concern and external locus of control negative?

RQ5: Is there a positive relationship between animal welfare and internal locus of control?

RQ6: Is there a negative relationship between animal welfare and external locus of control?

RQ7: Is the relationship between internal locus of control and attitudes towards meat consumption positive?

RQ8: Is the relationship between external locus of control and attitudes towards meat consumption positive?

1.4 Significance and Justification of Study

- This study serves as a springboard for future research in the field of societal and consumption marketing as well as for consumer behaviour. Current research regarding meat consumption delves into meat consumption with a focus on meat reduction studies that are predominantly in a Western context. Marketing has a range of functions whereby consumer behaviour itself has many facets that must be considered by practitioners to create, communicate and deliver value to target consumers. This study aims to provide practical implications thereof.
- The investigation on health consciousness, environmental concern and animal welfare on both internal and external locus of control and attitudes goes far beyond the current consumer behaviour studies, especially regarding food consumption. In addition, this study will serve as a platform for further development and insight regarding the psychology of marketing and predictions of behaviour in terms of meat consumption in the developing country context where economic growth and average income is expected to increase, resulting in an increase in forecasted meat consumption (Esterhuizen, 2015).
- Moreover, this research aims to analyse and interpret current and existing knowledge as well as to add new knowledge and insight to the world of academia in the analysis of consumer behaviour, internal and external control factors and consumer attitudes.
- From a practice and policy standpoint, research dealing with meat consumption attitudes can inform policy makers and practitioners in designing, creating and delivering various tailor made interventions to support global sustainability initiatives and ultimately

influence consumers to adopt a more plant-based diet as opposed to one predominantly consisting of meat and meat by products (Graca, Calheiros, & Oliveira, 2015). For example, the nature of this research could assist in providing targeted information to populations that are more susceptible to misinformation with regard to reducing meat consumption, such as lower income and less educated demographics within the developing country context.

It is important to note that consumers that possess a highly positive attitude toward meat consumption are likely to rationalise meat consumption whereby certain initiatives aimed at reducing meat consumption may result in consumers adopting various defence mechanisms or loss aversion strategies where they become even more deeply attached to their personal rationalisations regarding meat consumption (Graca, Calheiros, & Oliveira, 2015). While those with a somewhat negative attitude towards meat consumption would be more likely to consider the potential benefits of changing consumption habits and more open to information regarding the various impacts that meat has on the planet as a whole (Graca, Calheiros, & Oliveira, 2015). This insight is immensely value able to policy makers and practitioners considering the inevitability of meat reduction to ensure sustainability and the need to create awareness of such realities.

1.5 Scope of the Study

The scope of the study is restricted to students at the University of the Witwatersrand esteemed to have a place with the Generation Y companion in the School of Economics and Business Sciences. The decision of the scope was chosen in view of various reasons. University of the Witwatersrand is one of the best and largest institutions of higher learning situated in Johannesburg – the economic hub of Gauteng Province in particular and South Africa at large. As a result of its reputation, University of the Witwatersrand happen to draw students from all walks of life, especially those from the affluent class in South Africa and beyond. It is therefore expected that the class of the students at University of the Witwatersrand are likely to afford meat. According to Petra (2016), Generation Y is heavily consumption-oriented. Nevertheless, it is also expected that a sizeable number of the students at University of the Witwatersrand belong to the Generation Y cohort – based on a cursory survey done by the researcher.

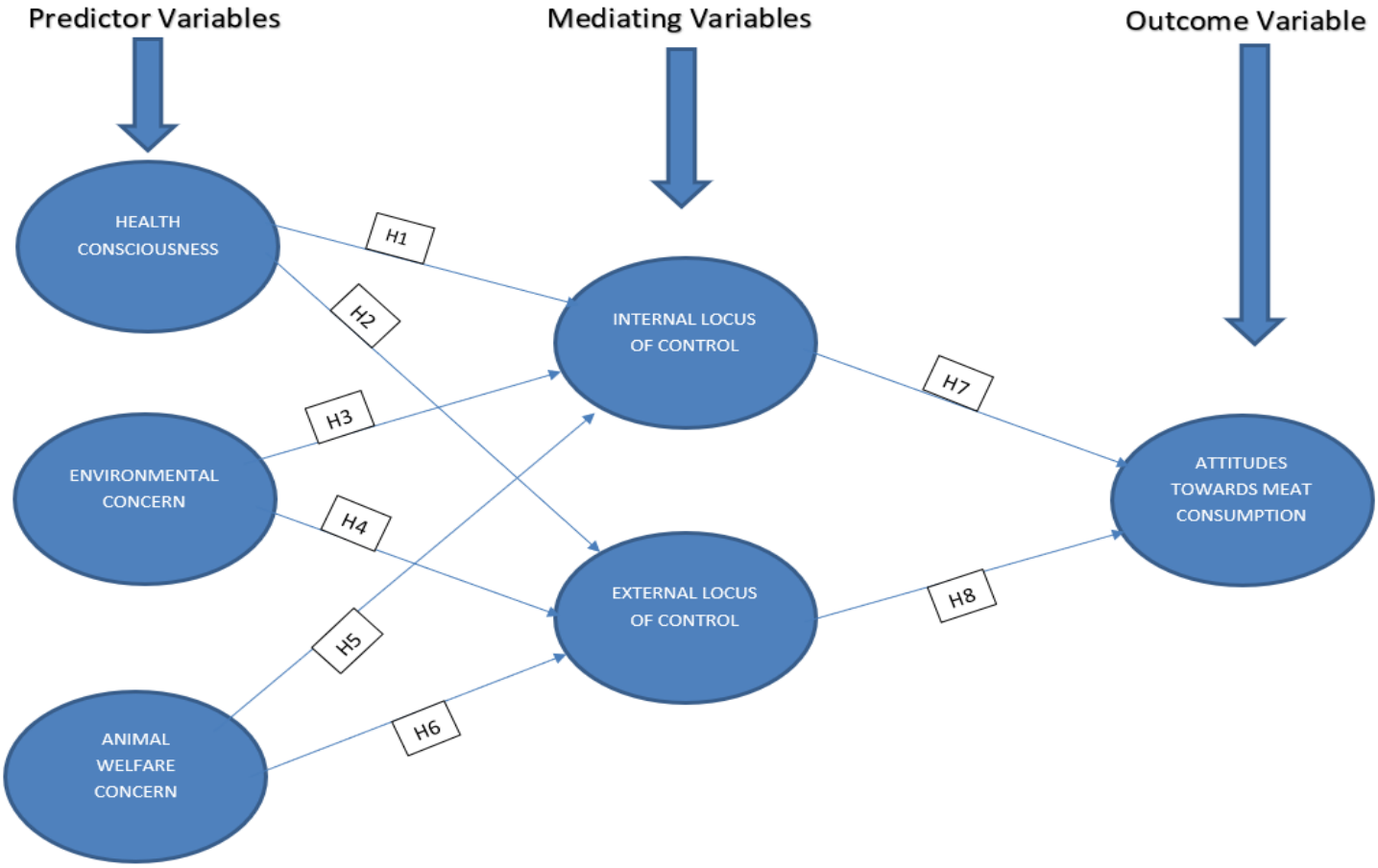
1.6 Conceptual Research Model and Hypothesis Development

The conceptual research model illustrated below (*Figure 1)* is used to graphically indicate the relationship between all the unobserved variables that are undertaken as part of this study. Holistically, the model set out below suggests that both internal and external locus of control

serve as separate mediating variables and are both influenced by three predictor variables (or vice versa). These three predictors take the form of health consciousness, environmental concern, and animal welfare. Furthermore, the research model insinuates that consumers' attitudes towards meat consumption is influenced by either their internal locus of control, external locus of control, or both, with regard to the three predictor variables.

The predictor (independent) variables used as part of this study are health consciousness, environmental concern, and animal welfare. The mediating variables are in the form of internal locus of control and external locus of control, and the outcome (dependent) variable displayed in the conceptual research model is attitudes towards meat consumption.

Figure 1: Conceptual model used in this study



1.6.1 Health Consciousness and Internal Locus of Control

H1: There is a positive relationship between health consciousness and internal locus of control.

1.6.2 Health Consciousness and External Locus of Control

H2: There is a negative relationship between health consciousness and external locus of control

1.6.3 Environmental Concern and Internal Locus of Control

H3: There is a positive relationship between environmental concern and internal locus of control.

1.6.4 Environmental Concern and External Locus of Control

H4: There is a negative relationship between environmental concern and external locus of control.

1.6.5 Animal Welfare and Internal Locus of Control

H5: There is a positive relationship between animal welfare and internal locus of control.

1.6.6 Animal Welfare and External Locus of Control

H6: There is a negative relationship between animal welfare and external locus of control.

1.6.7 Internal Locus of Control and Attitudes towards Meat Consumption

H7: There is a positive relationship between internal locus of control and attitudes towards meat consumption.

1.6.8 External Locus of Control and Attitudes towards Meat Consumption

H8: There is a positive relationship between external locus of control and attitudes towards meat consumption.

1.7 Literature Review

1.7.1 Theoretical Review

This study is grounded by two main theories that apply to consumption practice in the context of this study:

1. Theory of Consumption Values (TCV)
2. Cognitive Dissonance Theory

1.7.2 Empirical Review

This section of the literature review intends to mention and discuss the different latent variables used as part of this study. The latent (unobserved) variables are: Health Consciousness, Environmental Concern, Animal Welfare, Internal Locus of Control, External Locus of Control and Attitudes towards Meat Consumption.

1.7.2.1 Health Consciousness

Health consciousness is referred to as a broader construct that ultimately reflects how ready a person is to do something either to or for his/her own health (Chen, Attitude toward organic foods among Taiwanese as related to health consciousness, environmental attitudes, and the mediating effects of a healthy lifestyle, 2009). Moreover, Chen (2009) argues that essentially, health consciousness may be used to assess the degree of readiness that a consumer may have to take on healthy actions.

1.7.2.2 Environmental Concern

Environmental concern with regards to meat consumption is commonly focused on farming practices, more specifically commercial farming, that is designed for the maximization of outputs at the direct expense of the environmental well-being (Mortensen , 2016). According to Fransson and Garling (1999), environmental concern relates to an individual's evaluation of either their own behavior or others' behavior with the implications on the environment. It is further argued that environmental concern embodies a new way of thinking called the New Environmental Paradigm, whereby it is believed that consumers may care about the environment if they feel that a poor environment quality is detrimental to their health (Garling & Fransson, 1999).

1.7.2.3 Animal Welfare

According to Mortensen (2016), animal welfare refers to the ethical concerns over the quality of life of animals as well as the overall treatment of animals. The quality of life attribute of animal welfare is based upon the belief that non-human animals also have intrinsic values and that their interests should be valid objects of moral concern (Mortensen , 2016).

1.7.2.4 Internal Locus of Control

Locus of control refers to the extent to which a person may feel that they have control over consequences of behavior (Goyzman, 2010). Internal Locus of Control refers to the idea that the outcomes of our actions are heavily reliant on our own behavior (Asghar & Nazneen, 2016). In essence, internal locus of control is premised on the belief that an individuals personal behavior has a direct influence on the outcomes produced.

1.7.2.5 External Locus of Control

External Locus of Control is based on the idea that consequences of one's actions are guided by events and happenings that are not in the individuals' control (Asghar & Nazneen, 2016).

Gozyman (2010) suggests that persons with an external locus of control believe that outcomes are merely a result of luck, fate or chance where there are relatively low levels of predictability.

1.7.2.6 Attitude toward Meat Consumption

According to Pickens (2005), an attitude may be defined as a mental state of readiness that is organized by experience which ultimately has a direct influence on an individuals' response to all situations and objects to which this individual is related to. Consuming meat is often deemed to be morally conflicting on the grounds that a specific case of cognitive dissonance may be felt whereby a belief and a practice may be in conflict with one another, ultimately resulting in an unpleasant emotional state (Loughnan, Haslam, & Bastian, 2010). Moreover, this dissonance can be lessened through the alteration of one of the inconsistent elements, such as one's attitude towards meat or attitude towards animals and that a concern relating to the protection of animal rights is directly linked to individual attitude and behavioral practice towards meat (Loughnan, Haslam, & Bastian, 2010).

1.8 Research Design and Methodology

The study will make use of a quantitative research approach to test the causal relationships of the variables involved using a descriptive research design as the objectives entail determining the degree to which marketing variables are linked to real market phenomena (Mei, Ling, & Piew, 2012). Additionally, the study will follow a positivism research philosophy whereby a deductive approach will be used, and self-administered questionnaires will act as the method of data collection.

1.8.1 Research Philosophy

An individual can conduct research using a number of different approaches. At the foremost, the way in which a researcher makes sense of and interprets reality will likely impact the research process that is followed, which in turn will affect the findings and conclusive remarks that the study presents. There are two distinct dimensions of that form the foundation of philosophical modelling of a research study (Beech , 2005). These dimensions assess whether reality is socially constructed and subjective in nature, or whether there is only one reality. This first dimension is better known as Ontology, which ultimately informs the second dimension – Epistemology.

Ontology refers to claims and assumptions that one may have concerning the nature of reality and the nature of what is considered the truth of reality (Easterby-Smith, Thorpe, & Lowe, 2004). The epistemology can be stated as the nature of knowledge itself. Moreover, the

epistemology is associated with "what learning is, along with the sources and limitations of information" (Eriksson & Kovalainen , 2008, p. 57). This study adopted an objective ontology and a positivism epistemology. This is discussed in detail in chapter four (4).

Positivistic thinkers assume scientific and systematic methods in the knowledge generation process to improve the accuracy when describing and analysing the various parameters of the given study and the relationships among these parameters (Eriksson & Kovalainen , 2008). Moreover, the positivist perspective supports the idea that research models, that are generalizable, can be developed to effectively explain cause and effect relationships and can enable the forecasting of outcomes in the study (Ates, 2008).

The use of a suitable philosophical approach will improve the accuracy of results as an incorrectly aligned methodology and research problem will produce questionable results. Holistically, the research philosophy assists the researcher in answering key questions such as "How to research? What to research? Why research?"

1.8.2 Sampling Design Procedure

The sampling procedure can be demarcated as the process that is used to determine which portion of the population will be targeted and used as part of the study, including steps such as defining the target population as well as the physical selection of all relevant sample elements (Lohr, 2009).

1.8.2.1 Target Population

When formulating and carrying out any test, the identification of a target population is a necessity and it should clearly specify the characteristics of the target population that directly relate to the given study (Klein & Meyskens, 2001).

For this study, the target population was comprised of the students of the University of the Witwatersrand, within the city of Johannesburg, South Africa. Due to the University of the Witwatersrand being home to both local and international students, it can be assumed that the findings obtained while studying this research context may to some degree be representative of the tertiary institutions in South Africa.

1.8.2.2 Sampling Frame

A sample frame is made up of the environment in which the research is conducted and the subjects that are to be used in the study (Yang, Wang, & Su, 2006).

The Generation Y cohort is a classification of people based on characteristics and features that are defined by specific boundaries of age or date of birth (Petra , 2016). According to Petra (2016), the Generation Y cohort is comprised of individuals that are born within the years 1977 to 2000, where great attention is brought to the fact that other authors often reduce this age bracket to individuals born within the years 1980 and 1995. With respect to the stipulated age intervals for the Generation Y cohort, this study will target individuals within the age brackets of 18 years of age to 30 years of age. The core basis for the chosen age boundary is that the target population is made up of students who are largely between the ages of 18 and 30. These persons are students at the University of Witwatersrand, Johannesburg, South Africa, and aim to fall under those students currently enrolled within the Commerce, Law and Management faculty.

1.8.2.3 Sample Size

A sample size is simply explained as the number of respondents that collectively make up the sample from which the data is collected. The sample size for this study will consist of one-hundred and eighty (180) students within the aforementioned sampling frame. This sample size was deemed to be appropriate by means of historical data and previous research concerning the Partial Least Squares (PLS) approach to Structural Equation Modeling (SEM) using SmartPLS statistical software. Moreover, prior research recommends that a sample size of one-hundred (100) to two-hundred (200) is used as a decent starting point when carrying out path modelling, even though the PLS approach is known to handle small sample sizes well (Wong, 2013; Hoyle, 1995).

1.8.2.4 Sampling Method

Due to the study assuming a quantitative strategy, a probability sampling method whereby each sample has the same probability of selection will be utilised. Sampling method refers to a scientific process of selecting the individual sampling units that aim to provide the necessary evaluations by examining a part rather than the whole (Walliman, 2011). This study will employ a probability sample mainly because of its representativeness of the target population, which enhances the generalizability of the results to a larger population (Berndt & Petzer, 2011). Precisely, the simple random sampling technique will be used in the study, since each element of the population has an equal and known chance of being selected as part of the sample (Hudson & Ozanne, 1988). Therefore, all students enrolled in the School of Economic and Business sciences that fall under the Generation Y boundaries has an equal chance of selection.

1.8.3 Questionnaire Design

In line with the fact that this study made use of a quantitative research design, the survey approach to data collection is the most suitable. According to Mathers, Fox and Hunn (2007), surveys are commonly used in instances where the researcher seeks to describe reality by means of non-experimental, descriptive research designs where this approach is frequently used as a means to collect data relating to individual's attitudes and behaviours. In light of the above, a questionnaire is a type of survey and is regarded as a more traditional approach to make use of when conducting research and gathering data. A questionnaire can be defined as an arranged set of questions that are used to collect precise data by means of either open-ended (qualitative data) or closed-ended (quantitative data) questions (Mathers , Fox, & Hunn, Surveys and Questionnaires, 2007). This study employs a self-administered questionnaire that was designed in an ethical manner. This questionnaire is structured and based on a five-point Likert scale by use of a combination of closed-ended questions per variable designed to gather a quick, honest response from the respective respondents. Additionally, the questionnaire ensures the respondent's identity remains anonymous at all times, it is relatively inexpensive, is not time consuming, enables the participant to answer the questions at their own leisure and is sufficient for this study.

1.8.3.1 Respondents Profile Information

The questionnaire used as part of this study is structured and divided into two sections. Section A will encompass questions aimed at respondents' age (within a given bracket), gender, marital status, and level of tertiary study as well as the income/allowance bands of the respondents. Section B, C, D, E, F and G will include closed ended statements relating to each of the variables in the study and the instruments used to collect the required data.

1.8.3.2 Research Variables measurement instrument, scale and source

The independent variables used in this study are health consciousness, environmental concern, and animal welfare. The dependant variables undertaken as part of the study are internal locus of control, external locus of control, and attitudes towards meat consumption.

Accordingly, sections B to G of the survey questionnaire are used to gather data per variable in the study where each variable will have distinct instruments that are either adapted or adopted from other authors of studies that have been previously conducted.

Health Consciousness

Health consciousness is measured using a 10-item scale adapted from Chen (2009) health consciousness scale by means of a five-point Likert scale.

Environmental Concern

Environmental Concern will be measured using an 8-item scale adapted from Datta and Dean (2011) and will employ a five-point Likert scale.

Animal Welfare

Animal Welfare will be measured through the adaption of Kayser, Nitzkob and Spiller (2013) animal welfare scale. This scale consists of 8-items and will employ a five-point Likert Scale.

Internal Locus of Control

Internal Locus of Control will be measured using a 5-item scale adapted from Rotter's (1966) internal-external locus of control scale. The instrument will make use of a five-point Likert Scale.

External Locus of Control

External Locus of Control will be measured by adapting Rotter's (1966) internal-external locus of control scale. The instrument consists of 5 items and will utilise a five-point Likert scale.

Attitudes Towards Meat Consumption

The instrument used to test consumer attitudes towards meat consumption was adapted from Makanyeza (2014) attitude scale. The instrument consisted of 9 items and will employ a five-point Likert scale.

1.9 Data Analysis Approach

1.9.1 Data analysis software to be used

The first stage of the data analysis involves the data preparation process, once the questionnaires are completed. At this stage, a Micorsoft Excel spreadsheet is used to capture the data gathered from the questionnaires, as well as for data cleansing purposes. After the data cleaning process was undertaken, it was discovered that a number of questionnaires were either incorrectly answered and/or incomplete. To ensure the quality of the outputs gained from the data analysis, eight (8) questionnaires were deemed incomplete and inaccurate and hence they

could not be used. This left a total of one-hundred and seventy two (172) questionnaires that were fully complete and used for data analysis purposes.

According to Lohr (2009), descriptive statistics can be defined as the methods used to summarise information using charts, graphs, and tables, as well as equations of descriptive measures such as mean values, percentiles and measures of variation. By means of SPSS statistical software, the descriptive statistics and the frequency table (data transformation) will be generated to analyse the normality composition of the data.

Once the data has been imported into Microsoft Excel (for coding purposes), and a file is created that can be imported into the statistical programme and is suitable for statistical analysis the next stage in the process of data analysis is to ultimately test the hypotheses of the study. This is done by means of Structural Equation Modeling (SEM). SEM is defined as a statistical approach that enables hypotheses testing of the relationships between observed and latent variables and is said to encompass two main goals: the first being to gain insight into the variance of constructs within the specified model, and the second goal being to gain an understanding of the correlations between a set of variables (Hair, Ringle, & Sarstedt, PLS-SEM: Indeed a silver bullet, 2011).

The PLS approach to SEM is greatly valued in that it serves as a reliable measure of complex models and fewer respondents are required (Sarsedt et al., 2014). Additionally, scholars contend that the PLS-SEM approach is commonly used in the field of marketing where it has grown in its attractiveness in many other disciplines (Henseler, Ringle, & Sinkovics, 2009). Hence, this study has employed the component-based SEM approach by means of the Partial Least Squares (PLS) method.

1.9.2 Measurement instruments reliability and validity check

1.9.2.1 Reliability indicators

Reliability can be defined as "an accurate representation of the total population along with the extent to which the data gathered is consistent over time, and where (on condition that the results of the study can be replicated using a similar methodology) the research instrument is then deemed as being reliable" (Bennet & Williams, Mainstream Green: Moving Sustainability from Niche to Normal, 2011). Reliability can be determined by using a number of different indicators: the Cronbach's Alpha (CA) value, the Composite Reliability (CR) values as well as through the Average Variance Extracted (AVE) values. Here, the thresholds for the Cronbach's

Alpha and the Composite Reliability are required to be above 0.7 to verify reliability. Additionally, the Average Variance Extracted is required to be above 0.5 to indicate reliability.

1.9.2.2 Validity Indicators

Validity will be tested using two main tests: Convergent validity and discriminant validity. Convergent validity can be further measured by means of factor loadings which serves as a sufficient condition of convergent validity if the values are also greater than 0.5 (Drost , 2011).

Using the Inter-construct correlation matrix, this study assessed the levels of discriminant validity where the values are required to be lower than 0.6 and in some cases lower than 0.85, which implies the existence of discriminant validity (Kimberlin & Winterstein, 2008). Discriminant validity is further verified if the average variance extracted for a variable is larger than the square of the shared variance (highest shared variance) of that particular variable (Nusair & Hua, 2010).

1.9.2.3 Model Fit

In line with the component based approach of structural equation modeling and the use of SmartPLS 3.0 statistical software, this approach is disadvantaged on the grounds that it does not provide model fit indices. However, when utilising SmartPLS 3.0 statistical software both the quality of the measurement model and the quality of the structural model can be accounted for using the R(square) values for the dependant variables that the software does provide (Tenenhaus, Vinzi, Chatelin, & Lauro, 2005). These values, along with the AVE values previously determined, can then be applied to the Global Goodness-of-fit formula to determine some measure of model fit. According to Tenenhaus, Vinzi, Chatelin and Lauro (2005), this value is required to be above 0.36 to verify the existence of model fit.

1.9.3 Structural Model Assessment

1.9.3.1 Hypothesis Testing

In order to assess the structural model (i.e. the inner model), the path coefficients will be extracted with the aim of analysing the strength and the effects of the predictor variables on the mediating variables and the outcome variables proposed in the conceptual model. Essentially the path coefficient values will be used to determine whether or not the proposed hypotheses are supported or not, as well as the relative strength of the various proposed relationships based on the magnitude of these values (Chinomona & Maziriri, 2017).

Furthermore, the significance of the proposed relationships of this study will be determined by means of the bootstrapping method (using SmartPLS 3.0 statistical software) to generate both

the T-statistics as well as the P-values serving as the key measures of significance (Gye-Soo, 2016). The required thresholds for both the T-statistics and the P-values are: T-value must be equal to or greater than 1.96 and the P-values must be less than 0.05, and it is imperative that both these thresholds are met simultaneously to indicate definite significance of the proposed relationships (Gye-Soo, 2016).

1.9.4 Testing for Mediation

The SmartPLS 3.0 statistical software enables the researcher to test for the mediation effect where insights towards the strength of the mediator variables are shown. The strength of the mediation effect is determined by the magnitude of the path coefficient values for each specific indirect effect, generated using the 'consistent PLS' algorithm through SmartPLS 3.0 statistical software.

Additionally, the significance of the mediation effect will be determined using the 'consistent PLS bootstrapping method' (through SmartPLS 3.0), where the T-statistics and the P-values will be analysed, indicating whether the mediating variables significantly mediate the relationships between the independent (predictor) variables and the dependant (outcome) variable. The thresholds for the T-statistics and the P-values are required to be: T-value must be equal to or greater than 1.96 and the P-values must be less than 0.05, and it is imperative that both these thresholds are met simultaneously indicate definite significance of the proposed relationships (Gye-Soo, 2016).

1.10 Structure of dissertation

- **Chapter 1:** Introduction and background to the study
- **Chapter 2:** Literature Review: Theoretical Framework & Empirical Review
- **Chapter 3:** Conceptual model and Hypothesis Development
- **Chapter 4**: Research Methodology and Design.
- **Chapter 5:** Data Analysis, Discussion and Presentation of findings.
- **Chapter 6:** Conclusions and recommendations.

1.11 Ethical Considerations

Prior to conducting the study, permission will be requested through the research directorates of the University of the Witwatersrand. This research will ensure the confidentiality of information provided by the respondents while protecting their identities and interests as well as complying with the ethical standards of academic research. Furthermore, through the use of a cover letter attached to the front of the questionnaire instrument, all respondents will be

informed that the study is part of a master's degree research project that is solely conducted for academic purposes along with the potential impact of the study. Additionally, all responses will be kept confidential and the findings of the study will be reported in aggregate.

Summary

This chapter served to outline the study in its entirety. This began with a discussion into the background of the study, followed by an in depth look into the problem statement and research gap. Additionally, this chapter listed the research objectives and research questions followed by the significance of the study. The conceptual model used as per this study was further illustrated, alongside the accompanying hypothesis statements. This chapter then went on to provide a brief literature review followed by the research methodology and data analysis approach that this study seeks to employ.

The following chapter will delve into the literature review of both the grounding theories as well as an empirical review of the variables used in the conceptual research model.

CHAPTER TWO: LITERATURE REVIEW

Chapter one provided a background to the study, along with the presentation of the research gap and an overview of the study in its entirety. This chapter begins by providing a contextual overview of meat consumption in modern society and is thereafter two-folded: the theoretical grounding of the study and the empirical literature review.

The theoretical review highlights two theories that underpin this study, namely the Theory of Consumption Values (TCV) and the Theory of Cognitive Dissonance. The discussion around these underlying theories is inclusive of their relevance with the variables chosen for this study, and why they are suitable in this study context. The empirical review of literature seeks to provide an in-depth discussion of the variables that make up the conceptual model. These variables are Health Consciousness, Environmental Concern, and Animal Welfare as the predictor variables; External Locus of Control and Internal Locus of Control assuming the role as double mediating variables; and Attitudes towards Meat Consumption as the outcome variable.

2.1 Contextual Overview: Meat consumption

The current food system is an imperative aspect to consider when looking at drivers of global environmental change as well as future sustainability (Allievi , Vinnari, & Luukkanen, 2015). The two major reasons for this growing concern are: firstly, population projections imply that the demand for food will continue to increase and secondly, that there is a significant shift towards the consumption of food with higher content of animal protein and fats on the basis that global per capita income is on the rise (De Backer & Hudders, 2015). Moreover, the concept of sustainable development is commonly portrayed as a three-dimensional triangle involving societal, economic and environmental aspects where meat production and consumption is directly linked to all three of these sustainability dimensions (Allievi , Vinnari, & Luukkanen, 2015). In more recent ages, philosophers argue that there is a fourth dimension of sustainability which encompasses animal ethics and animal welfare concerns that also need to be considered (Allievi , Vinnari, & Luukkanen, 2015).

Consumers that are omnivores are referred to as individuals that eat both plant and animal produce, and it is argued that this classification of individual continues to make up much of the global population (Piazza, et al., 2015). Research indicates that many omnivores are affected by a meat paradox where they are morally conflicted by the idea of their consumption behaviour harming animals whilst simultaneously enjoying meat as a staple part of their diet

(Hayley, Zinkiewicz, & Hardiman, 2015). Researchers argue that, in accordance with the cognitive dissonance theory, solutions regarding this meat paradox can take two common directions: individuals can consciously reject meat consumption, ensuring that their behaviours align with their moral ideals, or an individual can place one's beliefs and attitudes in line with their behaviour through the utilisation of various psychological exercises, with the most common being that of rationalisation (Piazza, et al., 2015). Rationalisation refers to the provision of reasoned justifications for an individual's behaviour when it is faced with criticisms or is inconsistent with a fundamental part of an individual's character (Piazza, et al., 2015). For instance, an individual may justify meat consumption by denying that animals used as food suffer, or that humans are on top of the food chain and hence forming a sense of entitled rationalisation towards the killing and consumption of animals.

Although meat consumption is said to increase in the future, a recent publication by Forbes suggests that Millennials are ever more focussed on food and the impact that consumption has on the planet, their bodies, and animals (Rowland, 2018). Essentially, the meat industry is seeing a large number of customers turning towards a more plant-based diet resulting in a global shift away from meat in recent years (Latvala , et al., 2012). According to a recent report by GlobalData (leading data and analytics company), approximately 70% of the world population are consciously reducing their meat consumption or simply avoiding meat consumption entirely (Rowland, 2018). Evidence of this meat avoidance trend is seen through businesses and organisations that tap into various campaigns to as a means to support reduced meat consumption without giving up meat entirely (Springer, 2013). For instance, food businesses that encourage "Meatless Mondays" (Springer, 2013).

Furthermore, the motives that drive meat consumption among omnivorous individuals are commonly pointed towards taste and quality cues such as tenderness, texture and the flavour of meat (De Backer & Hudders, 2015). It is further contended that the "love for the taste of meat" is among one of the most major contributing factors concerning men and women of all ages who are disinclined to lower their meat consumption (Piazza, et al., 2015). Additionally, the vast majority of motivations for reducing or banning meat consumption stem from either personal health motives or moral motives. Personal health motives are based around the fact that meat could expose individuals to numerous health risks such as increased hormones, additives and a rise in bad cholesterol levels (De Backer & Hudders, 2015). Moral motivations are more concerned with animal health concerns, ecological and environmental wellbeing concerns (De Backer & Hudders, 2015).

2.2 Theoretical Review

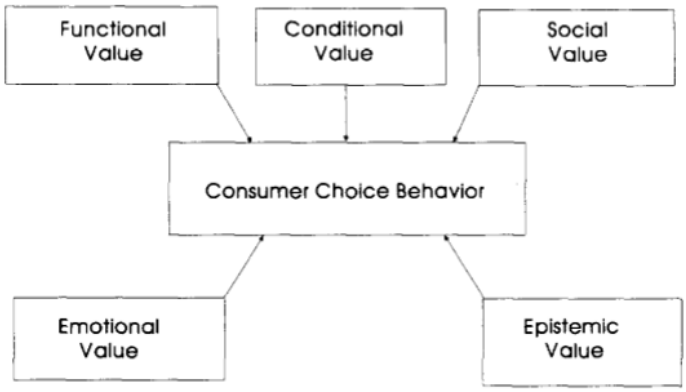
2.2.1 Theory of Consumption Values

The theory of consumption values was developed by Sheth, Newman and Gross (1991), and was developed to elaborate on and explain why consumers make the choices that they do. Essentially, this theory places an emphasis on consumption values, "explaining why consumers choose to buy or not buy (or to use or not use) a specific product, why consumers choose one product type over another, and why consumers choose one brand over another" (Sheth , Newman, & Gross, 1991, p. 159). According to Sheth et al., (1991), the theory of consumption values can be applied to various product categories ranging from durable and non-durable consumer products, to services and industrial goods. This theory has shown an outstanding predictive validity in over two-hundred situations.

The foundation of this theory of consumption values is based on three central axiomatic propositions (Sheth , Newman, & Gross, 1991). The first being that consumers' behaviours and choices are a function of a several consumption values. Secondly, the consumption values make unique contributions in all decision-making situations. Thirdly, the consumption values are all independent, but are often used in conjunction. Hence, a consumer's decision can be influenced by any one of the consumption values, or all of them, where each value has a distinct and incremental contribution to specific buying situations (Goncalves, Lourenco, & Silva, 2016).

The five values outlined by Sheth et al., (1991) that influence consumer choice are illustrated below:

Figure 1.1: Consumer choice behaviour



Source: (Sheth , J. N., Newman, B. I., & Gross, B. L., 1991)

Values are hereby defined as “concepts or beliefs about the desirable end states or behaviors that transcend specific situations, evaluate behaviors and events, and are ordered by relative importance” (Goncalves, Lourenco, & Silva, 2016, p. 1485). Functional value is outlined as the main driver of consumer choice and refers to the perceived value of a product or service to achieve utilitarian value from characteristics such as price, reliability and durability (Goncalves, Lourenco, & Silva, 2016). Social value is concerned with the perceived value that arises from a product or service that has an association with one or more specific social groups such as positively or negatively stereotyped demographics, cultural-ethic groups, and socioeconomic groups (Sheth , Newman, & Gross, 1991). Emotional value refers to the perceived utility aroused by the provocation of feelings or affective states that a product or service may induce (Goncalves, Lourenco, & Silva, 2016). For example, individuals might feel a negative set of emotions at the thought of killing a harmless livestock animal. Epistemic value is defined as “the perceived utility acquired from an alternative’s capacity to arouse curiosity, provide novelty, and/or satisfy a desire for knowledge” whereby it is argued that new experiences ultimately provide epistemic value (Sheth , Newman, & Gross, 1991, p. 162). For instance, consumers may be curious to feel the alleged implications of reducing their meat intake. Finally, conditional value is demarcated as the perceived usefulness of a product or service that stems from a set of circumstances or a specific situation that the consumer is facing, for example, a consumer might value red meat less if they are facing a specific situation where their health and physical well-being is deteriorating (Goncalves, Lourenco, & Silva, 2016).

Deducing from the above, this theory relates to the present study in the sense that values are said to directly influence consumer behaviour and serve as principles that consumers utilise when making preference and evaluative judgments (Goncalves, Lourenco, & Silva, 2016). Moreover, consumer values are reportedly useful in guiding attitudes, actions, judgements, as well as comparisons between specific situations and objects (for instance, a comparison between the pro’s and con’s of eating meat versus not eating meat), where consumers’ values play a significant role in the growth of environmental beliefs and attitudes directly relating to the proposed ‘environmental concern’ and ‘consumer attitude toward meat consumption’ variables (Goncalves, Lourenco, & Silva, 2016). In a similar vein, consumers that are health conscious will inherently value their personal health and hence their behaviours will be in accordance with this value.

2.2.2 Theory of Cognitive Dissonance

The cognitive dissonance theory was developed by Leon Festinger (1957). This theory is premised on the idea that if an individual is aware of the fact that several things are psychologically inconsistent with one another, this individual will undertake numerous actions in an attempt to reduce this inconsistency (Festinger, Cognitive Dissonance, 1962). More so, it is argued that two ideas or items of information that do not psychologically fit together are in dissonant relation to each other and may directly relate to behaviour, opinions, feelings and aspects of the environment (Festinger, Cognitive Dissonance, 1962). The term 'cognitive' refers to the idea that this theory is based upon relations between items of information, that evidently can be changed as an individual can change their opinion and behaviour, ultimately changing the information one has about their opinion or behaviour (Festinger, Cognitive Dissonance, 1962). Changes that restore consistency are known as 'dissonance reducing changes' (Festinger, Cognitive Dissonance, 1962).

Accordingly, Bem (1967) is of the view that "if a person holds two cognitions that are inconsistent with one another, he will experience the pressure of an aversive motivational state called cognitive dissonance, a pressure which he will seek to remove, among other ways, by altering one of the two 'dissonant' cognitions" (Bem, 1967, p. 183). Essentially, cognitive dissonance is a motivational state of affairs, where dissonance drives an individual to alter their opinions and/or behaviour just as hunger compels an individual to eat (Festinger, Cognitive Dissonance, 1962).

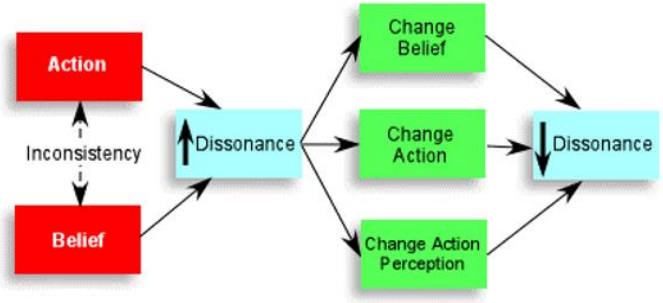
This theory of cognitive dissonance revolves around three vital assumptions (Festinger , A theory of cognitive dissonance, 1957):

1) *Humans are sensitive to inconsistencies between actions and beliefs* (Festinger , A theory of cognitive dissonance, 1957) – this refers to an inevitable internal alarm and the ability one has to recognise when his/her actions are inconsistent with their beliefs, attitudes and opinions. For example, an individual may believe that is wrong to harm animals, yet they choose to eat meat, hence they will be aware of this inconsistency and affected by it.
2) *Recognition of this inconsistency will cause dissonance and will motivate an individual to resolve the dissonance* (Festinger , A theory of cognitive dissonance, 1957) – according to the theory, the higher the degree of dissonance, the more driven an individual will be to resolve this discrepancy. Based on the level of importance an

individual attaches to their belief, opinion, or attitude and with the level of inconsistency with one's beliefs and behaviours, the degree of dissonance will vary. For example, one may feel very strongly about animal welfare and the suffering of livestock, inherently affecting their attitude towards meat consumption and motivating them to resolve this dissonance in various ways.

3) *Dissonance will be resolved in one of three ways* (Festinger , A theory of cognitive dissonance, 1957) – The first, and most simple, way to resolve dissonance is by changing one's beliefs entirely. For example, one may simply decide that harming animals or harming the environment is not a problem, which would eliminate any dissonance they may have. However, attitudes and beliefs are considered quite stable and do not change easily, therefore if the belief is important to that individual, such dissonance resolution is not likely and not very common (although it may be the simplest option). Secondly, one can opt to change their actions as a direct result of affective states such as guilt and anxiety, however this may not be entirely effective as humans are able to block out such feelings. Additionally, individuals may also benefit from the action that is inconsistent with their beliefs, such as the levels of protein that meat consumption provides. The third method of dissonance resolution, changing perceptions of action, is said to be the most common. This refers to changes in the way an individual views, remembers and/or perceives their actions. In other words, the rationalisation of one's actions. Essentially, this is when an individual views the action in a different context or from a different perspective in order to minimise the inconsistency. For example, one may rationalise meat consumption and reduce dissonance through the reinforcement of the view that everyone else eats meat so what is the point in stopping, even though this individual may be concerned about the negative health implications of meat, or the harmful side effects of meat production on the environment.

Figure 1.2: Illustration of the Cognitive Dissonance Theory



Source: (Festinger , A theory of cognitive dissonance, 1957)

Based on the above analysis of the cognitive dissonance theory, it is clear that this theory effectively serves as grounding for the present study. This is further reinforced by the idea that individuals will often utilise internal justification to reduce dissonance through the alteration of one's self, such as altering one's attitude or behaviours (Bem, 1967). This applies to the present study, serving as confirmation that an individuals beliefs with regard to the predictor variables and the subjective importance of each of these predictor variables, namely: health consciousness, environmental concern, and animal welfare, will ultimately influence the perceptions and attitudes one has towards meat consumption.

2.3 Empirical Review

2.3.1 Health consciousness:

According to Chen (2011), consumers tend to make their food choices based on frequently mentioned health motivations whereby the clear majority of theoretical models insinuate that health behaviour is a direct result of the health-related drive to prevent disease or improve one's health. Health consciousness may be used to assess the degree of readiness a consumer has to undertake 'healthy actions' and can be defined as an individual's willingness to do something to his/her personal health (Chen, The joint moderating effect of health consciousness and healthy lifestyle on soncumers' willingness to use functional foods in Taiwan, 2011). In a similar vein, Buhrau and Ozturk (2018) are of the view that health consciousness refers to the extent that individuals are concerned with their health. Current research suggests that there is a significant difference in knowledge and actual behaviour of consumer's as a result of conflicting motivations, for example an individual's motivation to eat healthy may be directly influenced by their desire of hedonic pleasure (i.e. taste), leading to less healthy food choices (Buhrau & Ozturk, 2018). This may characterise low health conscious individuals and can be used to explicate why some consumers continue to eat a meat orientated diet even though it is medically and scientifically proven to have negative health implications on the human body. Consumers that are health conscious tend to be aware of and more concerned with their personal wellbeing, whereby they are self-conscious about their health and participate in healthy behaviours to both improve and maintain their overall health (Chen, The joint moderating effect of health consciousness and healthy lifestyle on soncumers' willingness to use functional foods in Taiwan, 2011). On the contrary, consumers that possess low levels of health consciousness make food decisions that are predominantly guided by their hedonic

related food cues such as taste and smell, and they have less motivation to engage in healthy behaviours and choose healthier food options (Buhrau & Ozturk, 2018).

According to Mesanovic, Kadic-Maglajlic, and Cicic (2013), health consciousness influences health attitudes and behaviours which can be conceptualised by means of four dimensions: Health Self-Consciousness, Health Responsibility, Health Information, and Health Self-Monitoring. Health Self-Consciousness explains that health conscious individuals express a greater concern when involved with potential health hazards (Mesanovic, Kadic-Maglajlic, & Cicic, 2013). These individuals are known as more health-responsible (second dimension), whereby they tend to have a greater involvement with their fitness, nutrition and stress management as well as the active involvement in searching for and using health information which encompasses the third dimension of health consciousness (Mesanovic, Kadic-Maglajlic, & Cicic, 2013). The fourth and most crucial dimension of health consciousness is referred to as health self-monitoring which involves and demonstrates the intensity with which individuals value healthy conditions whether it is diet or lifestyle related (Mesanovic, Kadic-Maglajlic, & Cicic, 2013).

2.3.2 Environmental Concern:

As a direct result of economic growth in recent times, global consumption of consumers is on the rise and has led to significant levels of environmental deterioration due to over-consumption and the exploitation of natural resources (Datta & Ishaswini, 2011). Consequently, the natural environment is under strain whereby significant contributions are made toward global warming, pollution of sea and rivers, noise and light pollution, desertification, acid rain, and the depletion of the stratospheric ozone layer (Datta & Ishaswini, 2011). According to Ramayah, Lee, and Mohamad (2010), developing countries are increasingly concerned with environmental deterioration and how it shapes their respective economies and policies.

Environmental concern symbolises an individuals' overall orientation towards the environment and the level of concern and apprehension regarding environmental issues whereby it is evident that there is a positive correlation between environmentally friendly behavior and environmental concern (Lin & Huang, 2012). Although there is dearth of literature on the dimensions of environmental consciousness in relation to meat, other than the global warming and climate change dimension, it is argued that consumers are inclined to have a strong self-efficacy orientation vis-à-vis environmental consumption (Pohjolainen, Tapio, Vinnari,

Jokinen, & Rasanen, 2016). In other words, consumers are inclined to have the belief that one's consumption choices can have a significant impact on environmental issues.

Literature regarding environmental concern suggests that pro-environmental concern can be conceptualised as "a general attitude that reflects the extent to which the consumer is worried about the threats to the environment" (Datta & Ishaswini, 2011, p. 126).

2.3.3 Animal Welfare:

Consumers are increasingly adopting an ethical approach towards consumption practice (de Bakker & Dagevos, 2012). Ethical standpoints regarding meat consumption are often taken from the global fairness perspective where it is argued that the wealthier countries are more responsible for the ecological alteration of the earth and hence they should atone for the consumption of animals (de Bakker & Dagevos, 2012). In a similar vein, meat consumption also raises serious ethical concerns regarding our moral duty towards animals, and more specifically, towards the commodification of animals in modern livestock industry and commercial farming practice (de Bakker & Dagevos, 2012).

Farm animal welfare came about in the 20th century as a result of scientific findings and civil anxieties related to industrialised farm animal production which is now a common component in food animal supply chains (Buller & Roe, 2015). It is argued that context, and more importantly, social and cultural values strongly influence interpretations of welfare status and the movement towards the active management of these welfare issues (Buller & Roe, 2015).

From an animal welfare standpoint, the ethical dilemma of humans consuming animal flesh can be argued in both radical or moderate ways. A radical standpoint would argue that we as humans do not have the right to treat animals as factory products and hence we should boycott eating meat from such meat production systems (de Bakker & Dagevos, 2012). Additionally, a more moderate argument would be in line with consumers only buying and eating meat from production chains that encompass and demonstrate high levels of animal welfare (de Bakker & Dagevos, 2012). These are just a couple of a vast array of ethical arguments that can be put forward that are increasingly influencing people to either lower their meat consumption or become a vegetarian and give up meat entirely. Although there are strong ethical arguments concerning modern meat consumption, many consumers seem to be ignorant, with only some individuals adopting a sustainable food lifestyle (Buller & Roe, 2015). The key issue regarding animal welfare is that good ethical arguments are often easily forgotten or merely ignored when an individual is buying food, which brings forth the reality of the commonly argued 'attitude-

behavioural intention' gap which essentially concludes that consumers may deter from sustainable consumption on the basis that they are egocentric and irresponsible beings (de Bakker & Dagevos, 2012).

Despite the growing concern for animal welfare, a vast array of studies indicate that consumer opinions around animal welfare and livestock breeding, along with related consumption decisions, noticeably differ among individuals (Jonge & van Trijp, 2013). A key underlying issue in understanding consumers and their demand for animal welfare is in the fact that when making purchase decisions, consumers often need to make a trade-off between various product attributes (e.g., price, health, animal welfare, taste) (Jonge & van Trijp, 2013). For instance, although certain consumers may have a concern for animal welfare, they might still choose to consume conventionally produced meat products on the premise that price or taste is weighted more heavily in the consumers' decision-making process.

According to Kayser, Nitzko and Spiller (2013), ethical factors as external effects of meat production and consumption are classified as the major influencers of general attitudes towards meat production and consumption where it is argued that animal welfare concerns are the primary cause of ethical concerns that result in reduced meat consumption. It is highlighted that one of the most prominent lifestyle inclinations relating to meat consumption is the moral and virtuous treatment of animals (Kayser, Nitzko, & Spiller, 2013). Holistically, literature suggests that sustainable consumers have a growing preference for meat that is produced in an 'animal-friendly' manner (Kayser, Nitzko, & Spiller, 2013).

2.3.4 Locus of Control:

Locus of Control (LoC) is a concept from Julian Rotter's Social Learning Theory and is simply outlined as a generalised expectation that an individual has regarding whether or not this person holds or lacks power over what happens to him/her (Bergvik, Sorlie, & Wynn, 2012). Moreover, it is argued that locus of control allows for the assessment of individuals' self-perceptions of control where it is proposed that perceptions of self-control are either guided by the extent to which individuals feel that rewards are reliant on their own behaviour, or are determined by forces outside of themselves and outside of their control (Roddenberry & Renk, 2010). Literature concerning locus of control suggests that personality traits as well as socio-economics and culture are some of the factors that influence consumer attitudes and behaviour towards nutrition and health (Gacek, 2013). Locus of control is a prominent measure that highlights how personality traits affect an individual's behaviour and can be further defined as

"a person being convinced, for a moderately, long lasting time, that the factors determining how they act are part of an external-internal continuum of control" (Gacek, 2013, p. 130).

2.3.4.1 Internal Locus of Control:

An internal locus of control refers to a general belief that a person's own actions are effective in controlling their lives and the outcomes of their actions where studies elucidate that individuals with an internal locus of control tend to take more responsibility for their personal health than those individuals with an external locus of control (Gacek, 2013).

2.3.4.2 External Locus of Control:

Individuals that have an external locus of control are better defined as "the subject's lack of confidence in being able to effectively control their life through one's own actions; instead attributing this control to outside environmental factors" (Gacek, 2013, p. 130).

2.3.5 Attitudes towards Meat Consumption:

Numerous studies indicate that factors relating to meat, such as healthiness, taste, price, safety and animal welfare play a significant role in consumers' attitudes towards meat consumption and their decisions to purchase meat (Latvala , et al., 2012). Additionally, a study conducted by Verbeke, Perez-Cueto, de Barcellos, Kystallis, and Grunert (2010) focussed on consumption patterns and attitudes of consumers related to pork meat where it was found that, on an attitudinal level, both environmental and animal welfare concerns were gaining position among consumers.

An attitude can be explained as a person's "consistently favourable or unfavourable evaluations, feelings and tendencies towards an object or idea" (Aman, Harun, & Hussein, 2012). Hence, attitudes towards meat consumption refers to the idea that individuals either have a positive or negative holistic evaluation and feelings towards the general consumption of meat.

The literature further suggests that "attitudes are affective evaluations of psychological objects, such as people, institutions, actions, and abstract concepts, and are situation specific" (Hayley, Zinkiewicz, & Hardiman, 2015, p. 99). Relatedly, it is argued that personal values are the underlying motivations that directly influence attitudes, and are demonstrated through various behaviours of consumers (Hayley, Zinkiewicz, & Hardiman, 2015). Although individual attitudes towards psychological objects can differ depending on the situation at hand, it is reasoned that the personal values by which attitudes are informed generally do not change contingent on the additional situation specific contextual factors (Hayley, Zinkiewicz, &

Hardiman, 2015). Hayley, Zinkiewicz, and Hardiman (2015), found that empirical literature relating to meat reduced diet attitudes and behaviours contends that individuals who are prone to engage in meat reduction are expected to vale universalism and be understanding of self-transcendence and openness to change values, where as individuals that do not intend to reduce their meat consumption are more prone to have higher self-enhancement values, such as power, as well as conservation values (e.g., tradition and conformity) and lower levels of universalism. According to Kildal and Kuhnle (2002), the idea of universalism refers to the totality, the general and what concerns everything and everyone. Additionally, it is further argued that this concept of universalism differs in various traditions of thought whereby, in moral philosophy, universalism signifies moral theories related to principles of universal validity that are not dependent or affected by specific cultures, relations or traditions (Kildal & Kuhnle, 2002).

Summary

This second chapter of the study was comprised of a literature review. The chapter began by providing context to the study with regard to meat consumption and behavioural trends thereof. Additionally, an analysis of two grounding theories was discussed, namely: the Theory of Consumption Values (TCV) and the Theory of Cognitive Dissonance. Thereafter, a detailed review of each variables used in the conceptual framework of the study was presented. The variables that make up this study and the framework of this study are: Health Consciousness, Environmental Concern, and Animal Welfare as the predictor variables; External Locus of Control and Internal Locus of Control assuming the role as double mediating variables; and Attitudes towards Meat Consumption as the outcome variable.

The next chapter highlights the conceptual model developed and presented for this study, alongside the development of the various hypotheses that this study proposed.

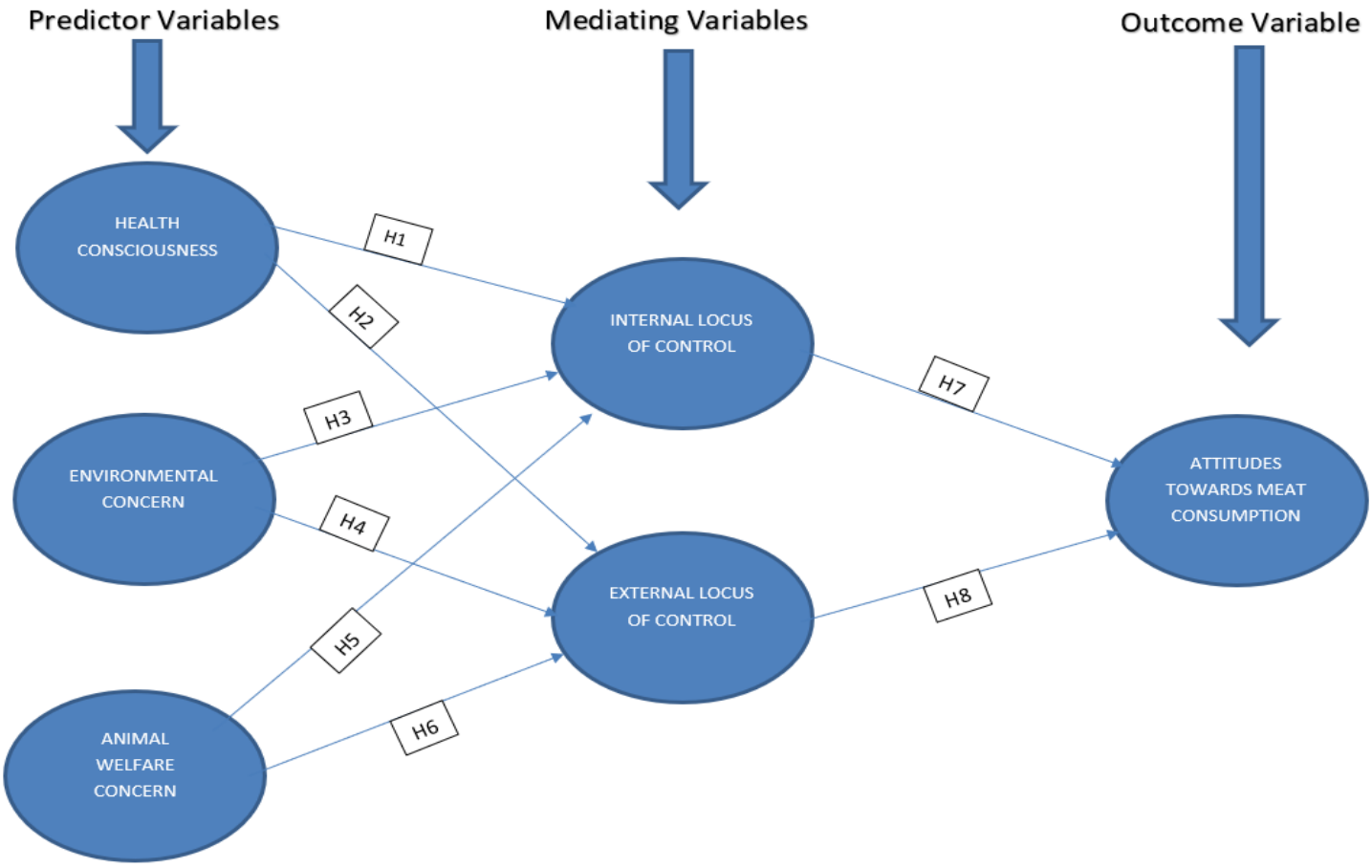
CHAPTER THREE: CONCEPTUAL RESEARCH MODEL AND HYPOTHESES DEVELOPMENT

The previous chapter provided a comprehensive literature review, both from a theoretical standpoint as well as from an empirical view. This chapter seeks to present the conceptual research model used as per this study, which is detailed and illustrated below. Moreover, this chapter aims to develop the various hypotheses statements that are presented in the conceptual research model.

The conceptual research model illustrated below (*Figure 1)* is used to graphically indicate the relationship between all the unobserved variables that are undertaken as part of this study. Holistically, the model set out below suggests that both internal and external locus of control serve as separate mediating variables and are both influenced by three predictor variables (or vice versa). These three predictors take the form of health consciousness, environmental concern, and animal welfare. Furthermore, the research model insinuates that consumers' attitudes towards meat consumption is influenced by either their internal locus of control, external locus of control, or both, with regard to the three predictor variables.

The predictor (independent) variables used as part of this study are health consciousness, environmental concern, and animal welfare. The mediating variables are in the form of internal locus of control and external locus of control, and the outcome (dependent) variable displayed in the conceptual research model is attitudes towards meat consumption.

Figure 1: Conceptual model used in this study



3.1 Health Consciousness and Internal Locus of Control

It is essential to clarify the nexus between health consciousness and internal locus of control; however, it is also imperative to note that there is a deficiency with regards to literature about these two constructs. A close related study conducted by Helmer, Kramer and Mikolajczyk (2012), highlight that if an individual has control of their health, it is assumed that this will have direct effects on their personal health behaviour, and hence their degree of health consciousness. It is further postulated that, if a consumer has an internal locus of control it is believed that they are to consider personal health as a combination of personal decisions regarding their health as well as an overall assessment of living a healthy or unhealthy lifestyle. In addition, Gracey, Stanley, Burke, Corti, & Beilin (1996) conducted a study which focused on nutritional knowledge, beliefs and behaviours in teenage school students and found out that individuals with an 'internal' locus of control are more likely to engage in preventive health behaviours because they see these steps as helping to protect them against poor health. Therefore, the following can be hypothesised:

H1: There is a positive relationship between health consciousness and internal locus of control

3.2 Health Consciousness and External Locus of Control

Stapleton and Smith (2013), suggest that the way an individual perceives personal control is directly related to the understanding of individual initiation, development and upkeep of numerous health preventing and health promoting behaviours, such as the degree to which an individual is conscious about their personal health. External locus of control is argued to be divided into two dimensions with the first dimension relating to control by chance and the second dimension concerning control by "powerful others" (Helmer, Kramer, & Mikolajczyk, 2012). For example, the chance dimension of external locus of control would mean an individual is of the belief that health is determined by luck and the second dimension would influence individuals to have a view that following advice from authorities and expert opinions will ultimately determine one's health and their health consciousness as a result (Helmer, Kramer, & Mikolajczyk, 2012). In the context of this study, health consciousness related to meat consumption is regarded as a conscious act whereby a vast array of publicly available medical research has concluded the various effects that meat consumption may have on an individuals' health. Therefore, individual perceptions towards meat consumption and the control individuals may feel they have over their health in a meat related context, would be deeply embedded in their behaviour. This allows for the assumption that individuals who are regarded as health conscious will likely believe that this consciousness is inherently something that is in their control, as opposed to being a derivative of chance and luck. Thus, the following hypothesis can be formed:

H2: There is a negative relationship between health consciousness and external locus of control

3.3 Environmental Concern and Internal Locus of Control

A closely linked study by Asghar and Nazneen (2016), argue that although there is dearth of studies assessing the relationship between locus of control and environmental concern, research indicates that individuals that possess an internal locus of control are more commonly motivated to undertake stronger pro-environmental actions and they are more easily influenced to extend more helpful behaviours toward the environment. Therefore, they are more likely to have increased levels of environmental concern resulting from their internal locus of control belief. Furthermore, "Meta-analyses of past studies demonstrated that internal locus of control is positively correlated with pro-environmental behavior" (Tobler, Visschers and Siegrist, 2012:199). Schwepker and Cornwell (1991) found that people with an internal locus of control had stronger intentions to choose products with environmentally friendly packaging. It is also argued that people with an internal locus of control as measured by the Environmental Action

Internal Control Index (EAICI), in contrast to those with an external locus of control, have been found to be more likely to engage in environmentally friendly behaviors which include purchase decisions (Hanss, 2012). Deducing from the above, the following hypothesis can be proposed:

H3: There is a positive relationship between environmental concern and internal locus of control

3.4 Environmental Concern and External Locus of Control

Although it is vital to explain the relationship between environmental concern and external locus of control, it is important to note that the literature regarding these two variables is still in its infancy. External locus of control refers to the idea which suggests that outcomes are the primary result of external factors whereby individual behaviours have little effect on what happens to an individual, society or the planet as a whole (Helmer, Kramer, & Mikolajczyk, 2012). In addition, Hickey (1976) maintains that external locus of control "refers to one's perception that positive and/or negative events are not a result of one's behaviour and hence are beyond his control" (Hickey, 1976, p. 282). Consequently, it can be logically presumed that individuals who believe that environmental welfare and environmental preservation or sustainability is beyond their control are likely to have lower levels of environmental concern, specifically when engaging in consumption practice. This is supported by a study conducted by Stapleton and Smith (2013) who state that when control efforts are situationally difficult and ineffective, this may produce negative outcomes that ultimately decrease the likelihood of an individual to engage in efforts of pro-environmental behaviour. Thus, it can be hypothesised that:

H4: There is a negative relationship between environmental concern and external locus of control

3.5 Animal Welfare and Internal Locus of Control

Literature concerning the relationship between animal welfare and internal locus of control is limited. People that occupy an internal locus of control perception in life follow the belief that the outcomes of their actions are a result of their own personal efforts, permanent characteristics or abilities (Luna & Tadich, 2019). For instance, the belief that an individual's pro animal welfare efforts would ultimately result in increased animal welfare. It is further argued that individuals with an internal locus of control have key links that exist between behaviour and consequences and/or between personal effort and outcomes (April, Dharani, & Peters, 2012). Animal welfare requires direct, personal actions or choices that are to be taken, with the expectancy of a certain outcome or effect to take place. Accordingly, locus of control

is referred to as "a personality construct that reflects one's belief or perception about who controls life and the environment, where this belief can exist in varying levels" (April, Dharani, & Peters, 2012, p. 125). Therefore, those that believe in the welfare of animals resulting from personal actions will more than likely have a general view that they have control over life, even animal life, and that humans can commit various actions that either improve or decrease the levels of welfare for animals. Taking the above discussion into account, the following hypothesis can be formed:

H5: There is a positive relationship between animal welfare and internal locus of control

3.6 Animal Welfare and External Locus of Control

Although there is dearth of literature around animal welfare and locus of control, more specifically external locus of control, one study by Brizgys (2018) assessed the link between perceived locus of control and the welfare state of working equids (work animals of the horse family). This study seeked to identify whether an equid owner's locus of control was a factor that influenced both the physiological and psychological welfare of these animals (Luna & Tadich, 2019). Brizgys (2018) discovered that those equid owners that occupied a higher external locus of control score (those that believe that their actions and beliefs are a result of luck, chance or fate) had equids with a lower animal welfare score. This insight and logic can be applied to the current study at hand, in the context of meat consumption. Those individuals that display a higher external locus of control would logically assume lower levels of animal welfare concerns on the premise that they may not feel like the welfare of the animal is actually in their direct control. Further research on locus of control states that those with an external locus of control have a reluctance to change behaviour on the basis that they do not see it as a primary source for altering reinforcement, and that even in the scenario of positive reinforcement, those with an external locus of control will not take it personally (April, Dharani, & Peters, 2012). Hence, this study argues that those individual's with high animal welfare interests believe that their actions would directly affect the well-being of animals in a positive way, following the belief that there is a direct consequence to their actions. Based on the above, it can be hypothesised that:

H6: There is a negative relationship between animal welfare and external locus of control

3.7 Internal Locus of Control and Attitudes towards Meat Consumption

Internal locus of control is based on the belief that outcomes are a result of an individual's own actions and attitudes are formed with respect to some facet of the individuals world in the form

of a physical object, a behaviour, a person or a living organism (Ajzen & Fishbein, Attitude-Behavior Relations: A Theoretical Analysis and Review of Empirical Research, 1977). On this premise it can be argued that an individual will form an attitude towards meat consumption based on the level of control they believe they have over all the consequences about consuming meat, and whether these consequences are subjectively viewed as positive or negative. Deducing from this view, the following hypothesis can be formed:

H7: There is a positive relationship between internal locus of control and attitudes towards meat consumption

3.8 External Locus of Control and Attitudes towards Meat Consumption

It is imperative to explicate the association between external locus of control and attitudes towards meat consumption, however there are scant studies which have discoursed on these two variables, hence the justification of the research gap. Closely related studies, for instance in the study entitled "Determinants of Halal Meat Consumption in China" by Ahmed, Sam Al-Kwifi, Saiti and Bin-Othman (2014), results also showed that in general, Halal meat consumption is determined by the pressure of others, personal conviction, and the perceived control. Torkestani, Dehqanan and Borujerdi (2015), conducted a study which revealed that a customer's 'external locus-of-control orientation', predicts the positive 'intention to loyalty. The findings of this study confirm the findings of Gountas and Gountas (2007), concentrating on the effect of the customers' psychological traits on forming the consumption behavior. Therefore, it can be hypothesized that:

H8: There is a positive relationship between external locus of control and attitudes towards meat consumption

Summary

This chapter illustrated and provided an explanation of the conceptual research model used in this study. Additionally, this chapter provided insights into the development of each hypotheses postulated in this study alongside the actual hypotheses statements. The following chapter will explore and discuss the research design and methodology that was undertaken to collect, analyse and interpret the data collected.

CHAPTER 4: RESEARCH METHODOLOGY AND DESIGN

Chapter 3 consisted of a detailed theoretical model that lay the foundation of this study. The relationships between variables highlighted on the model were explained, allowing for the development of various hypothesis statements.

This chapter seeks to explore the research methodology undertaken, along with a framework of the data analysis techniques that will be carried out in the next chapter. The research methodology and research design are the two central aspects of the research methodology. Research methodology refers to the systems used to obtain, analyse and interpret data that will generate new knowledge (Cresswell & Poth, Qualitative Inquiry and Research Design: Choosing Among Five Approaches, 2017). In essence, a methodology provides an outline of the processes and techniques that will enable the researcher to effectively answer questions and solve problems (Cresswell, Research Design: Qualitative, Quantitative, and Mixed Methods Approaches, 2003).

The study used a design that was quantitative in nature which resulted in the researcher employing a deductive approach, which is positivistic in nature. As per any study utilising a deductive approach, theoretical hypotheses were developed and are then tested in the chapters that follow. The researcher took the decision to use a five-point Likert scale when collecting data from participants concerning their attitudes towards meat consumption. This Likert scale was chosen due to the study adopting instruments that were previously measured by a five-point Likert scale, hence the researcher deemed it most appropriate to utilise the same measurement scales in the current study. A physical survey research questionnaire was self-administered to respondents who belonged to the School of Business and Economics at the University of the Witwatersrand, and were within the boundaries of the generation Y cohort outlined further on in this chapter.

The comprehension and use of an appropriate methodology is vital in order to make use of relevant techniques that aim to provide the intended results. Holistically, the research design shapes how data was to be gathered, what instruments were utilised, how these instruments were used, as well as the proposed means for analysing data collected on the field.

4.1 Research Philosophy

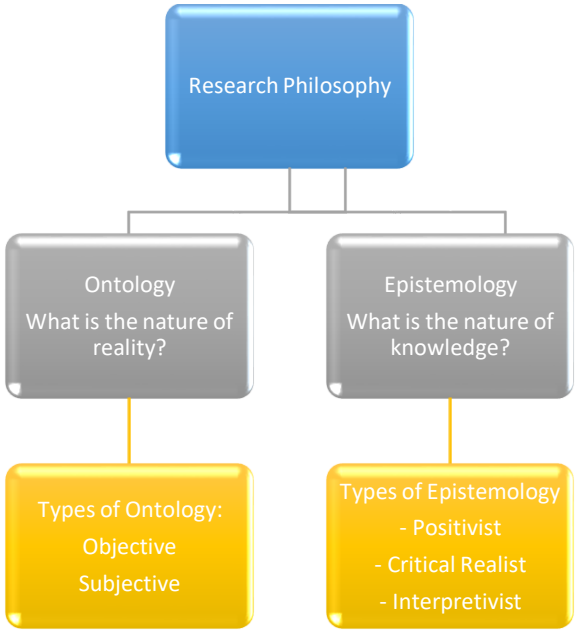
An individual can conduct research using a number of different approaches. At the foremost, the way in which a researcher makes sense of and interprets reality will likely impact the research process that is followed, which in turn will affect the findings and conclusive remarks

that the study presents. Hence, it is imperative for researchers to understand the philosophical assumptions available to ensure the most suitable research techniques and strategies are carried out in the research process.

A research paradigm is an arrangement used by scholars which encompasses the convictions, qualities and suppositions that a group of experts have in common, specifically aimed at the nature and direction of research (Beech , 2005). Accordingly, a paradigm refers to a structure or arrangement of both logical and academic thoughts, qualities and assumptions (Beech , 2005). Furthermore, philosophical paradigms possess numerous advantages that are of significant value to academics that aim to conduct a research study. For instance, philosophical paradigms allow for the researcher to be better informed as to which research design will be most appropriate for the study, given the research objectives (Easterby-Smith, Thorpe, & Lowe, 2004). According to Easterby-Smith et al. (2004), philosophical paradigms result in the researcher identifying and creating research frameworks that may be unique and unknown, while also enabling the researcher to build a study of character and clarity.

There are two distinct dimensions that form the foundation of philosophical modelling of a research study (Beech , 2005). These dimensions assess whether reality is socially constructed and subjective in nature, or whether there is only one reality. This first dimension is better known as Ontology, which ultimately informs the second dimension – Epistemology. Figure 2 below assists in the understanding of these two dimensions and the intricacies of techniques relating to either dimension.

Figure 2: Research Philosophy

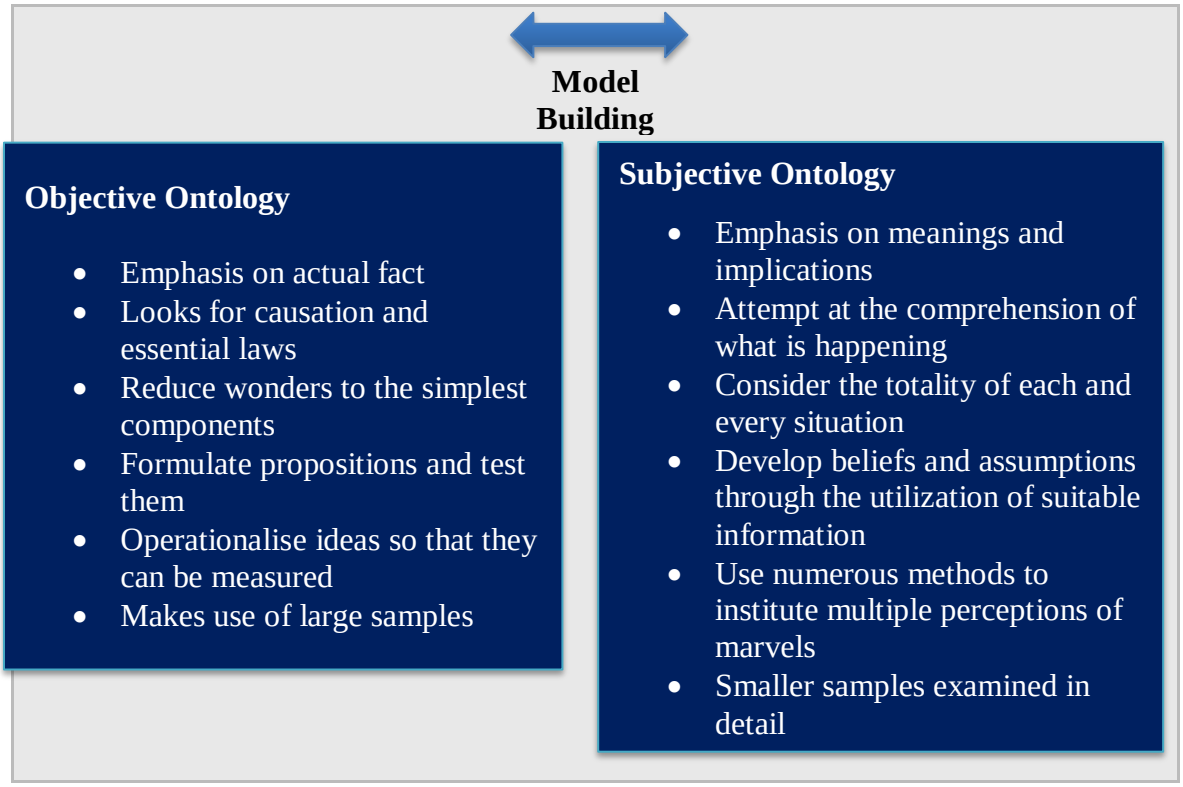


Source: This study

4.1.1 Ontology

Ontology refers to claims and assumptions that one may have concerning the nature of reality and the nature of what is considered the truth of reality (Easterby-Smith, Thorpe, & Lowe, 2004). More specifically ontology looks at whether an objective reality truthfully exists, or whether the aforementioned claims and assumptions are merely a subjective reality that has been shaped by the individual's mind (Easterby-Smith et al., 2004; Flowers, 2009). Conclusively, individuals are comprised of numerous, deep-rooted ontological assumptions that inherently influence what they deem to be the truth about reality. Ensuring that these underlying assumptions are well defined is vital when conducting a research study as it is highly likely that if these assumptions are not clear, this can result in biased conclusions for certain elements of the study (Flowers , 2009). Deducing from the above, the possibility of preconceived notions go against the core purpose of conducting research in its entirety and hence such ontological assumptions are not up for discussion or criticism (Flowers , 2009).

Figure 3: Objective versus Subjective Ontology



Source: (Beech , 2005)

Figure 3 above highlights the primary differences between the two types of ontologies. Deducing from the above diagram (*figure 3*), this study adopted an objective ontology on the grounds that this study made use of facts and causality, using specific laws such as the

minimum threshold requirements of reliability and validity indicators, as well as the formation of proposed relationships that were later tested and conclusions drawn from a large sample of one-hundred and eighty (180) respondents.

4.1.2 Epistemology

As depicted in the research philosophy diagram (*figure 2*) above, the research philosophy is comprised of a second dimension referred to as the epistemology. Easterby-Smith et al., (2008), are of the view that the epistemology concerns the general arrangement of thoughts when looking at the most suitable method in understanding the nature of reality. Accordingly, the epistemology can be stated as the nature of knowledge itself. Moreover, the epistemology is associated with "what learning is, along with the sources and limitations of information" (Eriksson & Kovalainen , 2008, p. 57). In a similar vein, Flowers (2009) contends that the epistemology is the study of the techniques and grounds of learning that emerge into schools of thought with various strategies aimed at the enhancement of information about reality and knowledge.

As the ontology and the epistemology both inform the research philosophy, it may be confidently argued that the explicit ontological assumptions that one may have will also have an impact on the epistemological views and opinions. For example, the ontology (either subjective or objective) will influence the nature of the research and the choice of epistemological school of thought. This study deemed a more objective data set and hence a survey questionnaire was utilised to gather more objective results. Additionally, the use of probability sampling further guaranteed the objective nature of the study.

The section below aims to highlight the key features of each paradigm that ultimately serve as a framework by which the research is guided upon. Ates (2008), eludes to three key epistemologies that are briefly discussed next and synthesised in *table 1* below:

Table 1: Characteristics of Positivism, Interpretivism and Critical Realism Epistemology

Elements	Positivism	Interpretivism	Critical Realism
Truth	Is determined through confirmation of predictions	Dependent on who establishes it	Requires harmony between different viewpoints
Facts	Concrete and substantial	All human creations	Concrete but cannot be accessed directly

Aims	Discovery	Invention	Exposure
Starting Points	Construction of explicit hypotheses which guide the research	Meanings / Research questions	Assumptions / Research questions
Research Position (Goal Investigation)	Prescriptive, causal, theory confirming, deductive, ungrounded	Descriptive	Exploratory, descriptive, theory building, inductive, analytical
Direction of research inquiry	Measurement and analysis of causal relationships between variables that are generalisable across contexts	Development of idiographic knowledge based social experiences such as human ideas, beliefs, perceptions, values etc.	Development of idiographic knowledge based social experiences such as human ideas, beliefs, perceptions, values etc.
Designs	Experiment, survey	Reflexivity, interviews, participant observation	Triangulation, case study, convergent interviewing
Methodology	Outcome oriented, verification oriented	Observation, process oriented	Process oriented, discovery oriented
Techniques	Measurement	Conversation	Survey
Sample Size	Large	Very small	Small
Data collection	Structured	Unstructured	Semi-structured, Unstructured
Hardware and software	Questionnaires, statistical software programs	Tape recorders, interview guides, transcripts, qualitative software programs, visual methods	Tape recorders, interview guides, transcripts, qualitative software programs, visual methods
Type of data gathered	Replicable, discrete elements, statistical	Information-rich, contextual, non-statistical, somewhat subjective reality	Information-rich, contextual, non-statistical
Interview questions	Mainly closed with limited probing	Very open	Open with probing
Interaction of interviewer and phenomenon	Independent and value-free, a one way mirror	Passionate participant, transformative intellectual	Mutually interactive but controlled by triangulating data, an open window

Respondents' viewpoint	Emphasis on outsider's perception and being distanced from data	Emphasis on outsider's perception and being distanced from data	Emphasis on the insider's Perception
Information per respondent	Varies (specific to question)	Extensive	Extensive (broader question)
Analysis/ Interpretation	Verification/ Falsification	Sense-making	Probability
Data Analysis Type	Objective, value-free, statistical methods	Value-loaded, non-statistical	Non-statistical, triangulation
Causality	Cause-effect relations	Not addressed	Causal tendencies, generative mechanisms
Conclusions	Causality	Understanding	Correlation
Assessment of research quality	External validity and reliability are critical	Credibility, transferability, dependability, and confirmability	Construct validity is important

Source: (Denzin & Lincoln , 2000)*;* (Easterby-Smith, Thorpe, & Lowe, 2004)

Table 1 above serves as a synopsis concerning the major variances between the positivist, interpretivist, and critical realist paradigms. All three paradigms are different in both the nature of truth as well as the general approach to undertaken when conducting research. The three aforementioned paradigms are further discussed below:

4.1.2.1 Positivist Paradigm (Positivism)

According to Henning, Van Rensburg and Smit (2004), the positivist model used in the exploration of social reality was established through the philosophical ideas of August Comte, a French Philosopher. August Comte argued that both reason and observation are the most effective means of comprehending human behaviour, and that true knowledge can be attained by means of observation and experiment (Henning , Van Rensburg, & Smit, 2004). Positivism is referred to as an epistemological standpoint that advocates the practical use of natural scientific methods to analyse social reality and beyond (Cresswell & Poth, Qualitative Inquiry and Research Design: Choosing Among Five Approaches, 2017). Holistically, the positivist paradigm aims to provide rational explanations of human behaviours where relationships are

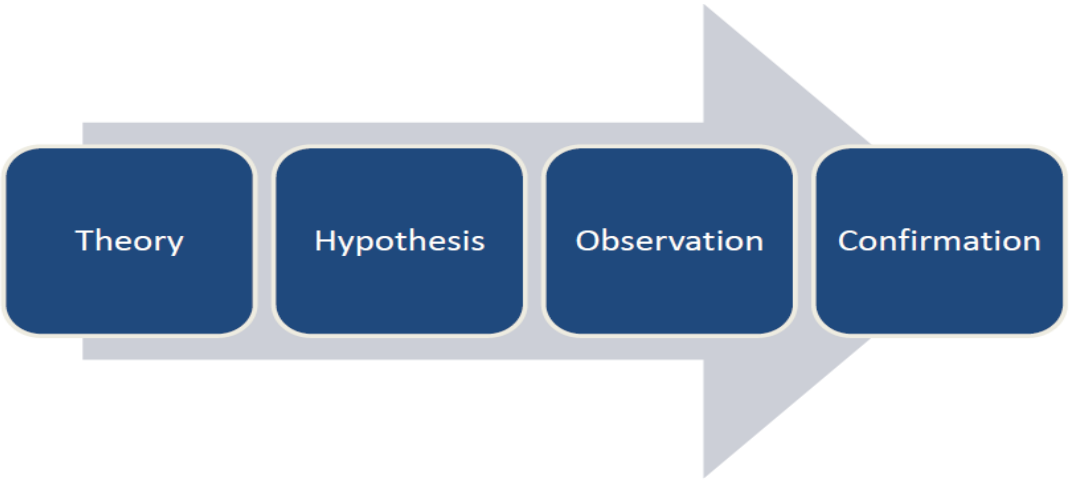
concrete and, by means of science, can be identified, studied and measured (Saunders, Lewis, & Thornhill, 2007).

In accordance with the view of Hudson and Ozanne (1988), the positivist ontological assumption follows the idea that there is an external, single and objective reality in response to any research question, irrespective of what the researcher believes. In a similar vein, Flowers (2009), contends that positivists view reality as being objective in nature and measurable by using methods that are not dependant on the researcher; hence, knowledge in the positivist sense is objective and quantifiable. In addition to the aforementioned, the positivist epistemology is deductive in nature on the grounds that it stems from natural sciences and quantifies ostensible social realities, allowing for hypothesis testing (Flowers, 2009).

Positivistic thinkers assume scientific and systematic methods in the knowledge generation process to improve the accuracy when describing and analysing the various parameters of the given study and the relationships among these parameters (Eriksson & Kovalainen , 2008). Moreover, the positivist perspective supports the idea that research models, that are generalizable, can be developed to effectively explain cause and effect relationships and can enable the forecasting of outcomes in the study (Ates, 2008). In essence, the positivist assumption places a large focus on facts that are empirically evaluated by means of quantitative methodologies, such as surveys, to ultimately allow the researcher to gather data sets that can be statistically analysed to yield numerous inferences and results (Saunders, Lewis, & Thornhill, 2007).

With reference to the above characteristics of the positivist epistemology, this approach was innately adopted to suit the nature of this study. Hence, this study followed a positivism research philosophy with the use of a deductive reasoning approach. Walliman (2011), states that a deductive reasoning approach begins with the formation of hypotheses statements (generalised statements) that make use of logical arguments for specific conclusions to be drawn, that either support or reject the premise of the study. It is further explicated that deductive reasoning may encompass a potential challenge in that the certainty of conclusions formed is heavily reliant on the certainty of the principle on which the study revolves around (Walliman, 2011).

Figure 4: Illustration of a Deductive Research Approach



The following two sub-sections serve as a transitory explanation of the other prominent research paradigms (as depicted in *table 1* above)

4.1.2.2 Interpretivist Paradigm (Interpretivism)

Researchers that utilise an interpretivist approach are of the view that reality is made up of individuals' subjective experiences of the externalities in today's world, following the ontological belief that reality is socially constructed underpinned by an anti-foundationalist nature of research insinuating that there is no specific method in the acquisition of knowledge (Willis, 1995). In accordance with Flowers (2009), a state of relationships are based on the experience, expectation and memories of an individual and/or group where the primary aim is to gain a deeper understanding of the implications that result from data analysis, rather than seeking to simply generalise results. Thus, meaning constructed and is constantly re-constructed by generating qualitative data using methods such as ethnography, phenomenology, hermeneutics and discourse analysis (Ates, 2008). Moreover, data analysis approaches commonly used by interpretivist researchers are inclusive of in-depth interviews, observations as well as the analysis of text (Beech , 2005).

Key specificities of the interpretivist paradigm include the vital need to analyse data within its context, perceptions of the world through the subjective experiences of individuals, the use of meaning focussed methodologies (as opposed to measurement), and the lack of predefined variables (dependent and independent) but rather placing emphasis on the full complexity of the emerging situation (Kaplan & Maxwell, 1994).

4.1.2.3 Critical Realist Paradigm (Critical Realism)

The critical realist paradigm was developed as a result of the criticisms of the positivist approach: being viewed as over-deterministic leaving little room for interpretivism and choice, and being viewed as highly relative and context specific (Hughes & Sharrock, 1997). Hence, critical researchers suppose that social realities are produced and reproduced by people, and are historically created (Myers, 2009). Furthermore, critical researchers believe that an individuals' ability to change their social and economic circumstances is limited by multiple forms of socially, culturally and politically dominant forces (Myers, 2009). In essence, the critical realist approach serves as a middle ground of the two aforementioned paradigms (positivism and interpretivism) where it seeks to combine the strengths of these two approaches while avoiding the limitations of both approaches (Easterby-Smith, Thorpe, & Lowe, 2004).

4.1.2.4 Importance of a Philosophical Foundation

It is evident that the philosophical approach used within a study directly influences the researcher's methodological choices. According to Holden and Lynch (2004), a philosophical underpinning is crucial in the sense that it can enhance the confidence levels within researchers when determining the suitability of the chosen methodology, which in turn will boost the confidence in the results yielded by the study and improve the researcher's abilities through exposure to other interpretations and prospects.

Moreover, the use of a suitable philosophical approach will improve the accuracy of results as an incorrectly aligned methodology and research problem will produce questionable results. Holistically, the research philosophy assists the researcher in answering key questions such as "How to research? What to research? Why research?"

As affirmed by the discussion above, this research assumed a positivist paradigm that is consistent with a quantitative methodology (briefly discussed below).

4.1.3 Quantitative versus Qualitative Research Methodologies

Based on the above analysis of research paradigms, and the justification of choice for the positivist paradigm, this study employed a quantitative methodology.

Table 2 below highlights the primary differences in orientation between the two different types of research:

Table 2: Difference between Qualitative and Quantitative Approach

Tend to or Typically	Qualitative Approaches	Quantitative Approaches
Use these philosophical assumptions	Constructivist/Advocacy/ Participatory knowledge claims	Positivist knowledge claims
Employ these strategies of enquiry	Phenomenology, grounded theory, ethnography, case study and narrative	Surveys and Experiments
Employ these methods	Open-ended questions, emerging approaches, text or image data	Closed-ended questions, predetermined approaches, numeric data
Use these practices of research, as the researcher	Positions him/herself Collects participant meanings Focuses on a single concept/phenomenon Brings personal values into the study Studies the context or setting of participants Validates the accuracy of findings Makes interpretations of the data Creates and agenda for change or reform Collaborates with the participants	Tests/verifies theories or explanations Identifies variables to study Relates variables in questions or hypotheses Uses standards of validity and reliability Observes and measures information numerically Uses unbiased approaches Employs statistical procedures

Source: (Cresswell, Research Design: Qualitative, Quantitative, and Mixed Methods Approaches, 2003).

4.2 Sampling Design Procedure

The sampling procedure can be demarcated as the process that is used to determine which portion of the population will be targeted and used as part of the study, including steps such as defining the target population as well as the physical selection of all relevant sample elements (Lohr, 2009). According to Lohr (2009), a sample that is inclusive of every characteristic of the population is virtually impossible to find, however a good sample is one that serves as a representation and where the characteristics of interest can be projected from the sample with

an accepted level of accuracy. The sampling process is comprised of four (4) related steps, as outlined by Cresswell and Poth (2017):

1. Outline the target population
2. Pinpoint the sampling frame
3. Delineate the sample size
4. Determine the sampling method

Grafstrom (2010), elucidates that a sampling design should be easy to implement, it should be efficient, and should be generally applicable by employing various approaches to measure the given sample.

The sampling procedure used for this study will be discussed next according to the four steps outlined above.

4.2.1 Target Population

When formulating and carrying out any test, the identification of a target population is a necessity and it should clearly specify the characteristics of the target population that directly relate to the given study (Klein & Meyskens, 2001). In line with the view of Banerjee and Chaudhry (2010), the target population can be fundamentally explained as the distinct population from which the sample is appropriately drawn. Klein and Meyskens (2001), contend that a target population is the specified population about which the researcher seeks information from and the totality of rudiments which are being discussed.

For this study, the target population was comprised of the students of the University of the Witwatersrand, within the city of Johannesburg, South Africa. Due to the University of the Witwatersrand being home to both local and international students, it can be assumed that the findings obtained while studying this research context may to some degree be representative of the tertiary institutions in South Africa.

4.2.2 Sampling Frame

After the selection of an appropriate target population, a grouping of all appropriate sampling units was listed, denoted as the sampling frame. Simply put, a sample frame is made up of the environment in which the research is conducted and the subjects that are to be used in the study (Yang, Wang, & Su, 2006). Warnecke (2005) further defines a sampling frame as the part of the target population from which the sampling is selected and warrants that each element of the target population has some probability of selection for data acquisition purposes.

The Generation Y cohort is a classification of people based on characteristics and features that are defined by specific boundaries of age or date of birth (Petra K. K., 2016). According to Petra (2016), the Generation Y cohort is comprised of individuals that are born within the years 1977 to 2000, where great attention is brought to the fact that other authors often reduce this age bracket to individuals born within the years 1980 and 1995. With respect to the stipulated age intervals for the Generation Y cohort, this study will target individuals within the age brackets of 18 years of age to 30 years of age. The core basis for the chosen age boundary is that the target population is made up of students who are largely between the ages of 18 and 30. These persons are students at the University of Witwatersrand, Johannesburg, South Africa, and aim to fall under those students currently enrolled within the Commerce, Law and Management faculty.

4.2.3 Sample Size

A sample size is simply explained as the number of respondents that collectively make up the sample from which the data is collected. According to Burmeister and Aitken (2012), it is crucial for researchers to take the sample size of their studies into consideration as this will ensure efficient use of research resources along with ensuring that the research results are statistically significant.

The sample size for this study will consist of one-hundred and eighty (180) students within the aforementioned sampling frame. This sample size was deemed to be appropriate by means of historical data and previous research concerning the Partial Least Squares (PLS) approach to Structural Equation Modeling (SEM) using SmartPLS statistical software. According to Wong (2013), Partial Least Squares approach is a soft modelling approach to structural equation modeling and hence this PLS approach becomes a good alternative to component based SEM when sample sizes are smaller. Wong (2013) further contends that sample sizes for this approach can be determined by the maximum number of arrows pointing at a latent variable in the model as depicted in the table below:

Minimum sample size required	Maximum # of arrows pointing at a latent variable in the model
52	2
59	3
65	4
70	5
75	6
80	7
84	8
88	9
91	10

Source: (Wong, 2013)

Moreover, prior research recommends that a sample size of one-hundred (100) to two-hundred (200) is used as a decent starting point when carrying out path modelling, even though the PLS approach is known to handle small sample sizes well (Wong, 2013; Hoyle, 1995). Therefore, this study utilised a sample size of one-hundred and eighty (180) respondents to better ensure the accuracy of the statistical outcomes of this research.

4.2.4 Sampling Method

This study assumed a quantitative strategy, hence a probability sampling method is best suited for the nature of the study. A probability sampling method can be explained as a scientific process of selecting the individual sampling units by examining a part as opposed to the whole, where the aim is to provide the necessary evaluations in the study and each sampling unit has the same probability of selection (Berndt & Petzer, 2011). In addition, a probability sampling method will be employed due to the representative value it provides with regard to the target population and the generalisability of the results to a larger population (Berndt & Petzer, 2011). Due to the study assuming a quantitative strategy, a probability sampling method whereby each sample has the same probability of selection will be utilised. Sampling method refers to a scientific process of selecting the individual sampling units that aim to provide the necessary evaluations by examining a part rather than the whole (Walliman, 2011). This study will employ a probability sample mainly because of its representativeness of the target population, which enhances the generalizability of the results to a larger population (Berndt & Petzer, 2011). Precisely, the simple random sampling technique will be used in the study, since each element of the population has an equal and known chance of being selected as part of the sample (Hudson & Ozanne, 1988). Therefore, all students enrolled in the School of Economic

and Business sciences that fall under the Generation Y boundaries has an equal chance of selection.

4.3 Data Collection Method

4.3.1 Ethical Considerations

Prior to conducting the study and collecting data, the necessary permission was acquired through the research directorates of the University of the Witwatersrand, South Africa. This research guaranteed that information provided by all participants was confidential, while simultaneously protecting the interests and identities of respondents as well as complying with the ethical standards of academic research. In addition, the use of a cover letter attached to the front of the survey instrument ensured that all current and impending participants of the study are aware that this research is being conducted as part of a master's degree research study which is only conducted for academic purposes. The study also aims to gather insights concerning the potential impact of the study and the overall purpose of it. Moreover, all responses were kept confidential and the findings of the study were reported in aggregate.

4.3.2 Questionnaire Design

In line with the fact that this study made use of a quantitative research design, the survey approach to data collection is the most suitable. According to Mathers, Fox and Hunn (2007), surveys are commonly used in instances where the researcher seeks to describe reality by means of non-experimental, descriptive research designs where this approach is frequently used as a means to collect data relating to individual's attitudes and behaviours. In light of the above, a questionnaire is a type of survey and is regarded as a more traditional approach to make use of when conducting research and gathering data. A questionnaire can be defined as an arranged set of questions that are used to collect precise data by means of either open-ended (qualitative data) or closed-ended (quantitative data) questions (Mathers , Fox, & Hunn, Surveys and Questionnaires, 2007). Closed-ended questionnaires are administered in various ways, some of which include face-to-face, telephonically, online or by self-completion and they make use of devices in the form of rating scales (i.e., Likert scales) and checklists to assist in quantifying and simplifying the attitudes and behavioural intention of individuals (Cresswell & Poth, Qualitative Inquiry and Research Design: Choosing Among Five Approaches, 2017).

Online or web-based questionnaires are rising to prominence in modern research methodologies. Although this form of administering questionnaires is attractive to many researchers due to its reach potential it is also accompanied by various drawbacks, one of which

lies within the legitimacy of the online questionnaire data spawned from the lack of researcher supervison which has great potential to reduce the accuracy and reliability of responses (Walliman, 2011).

Therefore, this study employs a self-administered questionnaire that was designed in an ethical manner. This questionnaire is structured and based on a five-point Likert scale by use of a combination of closed-ended questions per variable designed to gather a quick, honest response from the respective respondents. Additionally, the questionnaire ensures the respondent's identity remains anonymous at all times, it is relatively inexpensive, is not time consuming, enables the participant to answer the questions at their own leisure and is sufficient for this study. As such, a personal direct method will be used in the distribution and collection of the self-administered questionnaire. This involves the researcher individually approaching individuals (or groups of individuals) that fall within the sampling frame and requesting for a short duration of their time to take part in the study by completing the proposed questionnaire by themselves, eradicating the possibility of interviewer bias. As the participants complete the questionnaires, the researcher will collect and store them for further analysis.

4.3.3 Questionnaire layout and question arrangement

The questionnaire used as part of this study is structured and divided into two sections. Section A will encompass questions aimed at respondents' age (within a given bracket), gender, marital status, and level of tertiary study as well as the income/allowance bands of the respondents. Section B, C, D, E, F and G will include closed ended statements relating to each of the variables in the study and the instruments used to collect the required data.

4.3.4 Research variables measurement instrument, scale and source

The independent variables used in this study are health consciousness, environmental concern, and animal welfare. The dependant variables undertaken as part of the study are internal locus of control, external locus of control, and attitudes towards meat consumption.

Accordingly, sections B to G of the survey questionnaire are used to gather data per variable in the study where each variable will have distinct instruments, that are either adapted or adopted from other authors of studies that have been previously conducted.

4.3.4.1 Health Consciousness Scale:

Health consciousness is measured using a ten-item scale adapted from Chen (2009) health consciousness scale by means of a five-point Likert scale. The minimum score is '1', which

represents the belief to strongly disagree with the statement provided, and the highest score is '5', which indicates that the respondent strongly agreed with the given statement. The number '2' on the Likert scale represents the notion to disagree, '3' represents a neutral standpoint and '4' signifies the notion to agree with the statement. The instruments used to measure 'health consciousness' are:

HC1	I have the impression that I sacrifice a lot for my health.	Strongly disagree	1	2	3	4	5	Strongly agree
HC2	I consider myself very health conscious.	Strongly disagree	1	2	3	4	5	Strongly agree
HC3	I am prepared to leave a lot, to eat as healthy as possible.	Strongly disagree	1	2	3	4	5	Strongly agree
HC4	I think that I take health into account a lot in my life.	Strongly disagree	1	2	3	4	5	Strongly agree
HC5	I think it is important to know well how to eat healthy.	Strongly disagree	1	2	3	4	5	Strongly agree
HC6	My health is so valuable to me that I am prepared to sacrifice many things for it.	Strongly disagree	1	2	3	4	5	Strongly agree
HC7	I have the impression that other people pay more attention to their heath than I do.	Strongly disagree	1	2	3	4	5	Strongly agree
HC8	I do not continually ask myself whether something is good for me.	Strongly disagree	1	2	3	4	5	Strongly agree
HC9	I really do not think often about whether everything I do is healthy.	Strongly disagree	1	2	3	4	5	Strongly agree
HC10	I do not want to ask myself all the time whether the things I eat are good for me.	Strongly disagree	1	2	3	4	5	Strongly agree

4.3.4.2 Environmental Concern Scale:

Environmental concern is measured using an eight-item scale adapted from Datta and Dean (2011), by means of a five-point Likert scale. The minimum score is '1', which represents the belief to strongly disagree with the statement provided, and the highest score is '5', which indicates that the respondent strongly agreed with the given statement. The number '2' on the Likert scale represents the notion to disagree, '3' represents a neutral standpoint and '4' signifies the notion to agree with the statement. The instruments used to measure 'environmental concern' are:

EC1	Meat consumption has a negative impact on the environment.	Strongly disagree	1	2	3	4	5	Strongly agree
EC2	Meat consumption is not environmentally friendly.	Strongly disagree	1	2	3	4	5	Strongly agree
EC3	Meat consumption pollutes the environment.	Strongly disagree	1	2	3	4	5	Strongly agree
EC4	Meat consumption can harm the environment.	Strongly disagree	1	2	3	4	5	Strongly agree
EC5	I consider the effect that meat consumption has on the environment when making purchases.	Strongly disagree	1	2	3	4	5	Strongly agree
EC6	If a product is eco-labelled (e.g. an environmentally friendly label/free range label), this would influence my choice of purchase.	Strongly disagree	1	2	3	4	5	Strongly agree
EC7	I consider meat consumption okay from an environmental point of view.	Strongly disagree	1	2	3	4	5	Strongly agree
EC8	I consider buying environmentally friendly products that are available in the market.	Strongly disagree	1	2	3	4	5	Strongly agree

4.3.4.3 Animal Welfare Scale:

Animal Welfare is measured using an eight-item scale adapted from Kayser, Nitzkob and Spiller (2013), by means of a five-point Likert scale. The minimum score is '1', which represents the belief to strongly disagree with the statement provided, and the highest score is '5', which indicates that the respondent strongly agreed with the given statement. The number '2' on the Likert scale represents the notion to disagree, '3' represents a neutral standpoint and '4' signifies the notion to agree with the statement. The instruments used to measure 'animal welfare' are:

AW1	I cannot bear the sight of dead animals.	Strongly disagree	1	2	3	4	5	Strongly agree
AW2	If I am going to eat meat products, I would at least rather not be able to see that it was once a living animal.	Strongly disagree	1	2	3	4	5	Strongly agree
AW3	I find raw meat sickening.	Strongly disagree	1	2	3	4	5	Strongly agree
AW4	I avoid eating meat as much as possible because it means that an animal must be killed.	Strongly disagree	1	2	3	4	5	Strongly agree
AW5	I find meat from factory farming ok.	Strongly disagree	1	2	3	4	5	Strongly agree
AW6	To be honest, I do not think much about animal welfare.	Strongly disagree	1	2	3	4	5	Strongly agree
AW7	I have often thought about eating less meat because I feel so sorry for the animals.	Strongly disagree	1	2	3	4	5	Strongly agree
AW8	Animals should be kept in accordance with their natural needs.	Strongly disagree	1	2	3	4	5	Strongly agree

4.3.4.4 Internal Locus of Control Scale:

Internal locus of control is measured using a five-item scale adapted from Rotter's (1966) internal-external locus of control scale, by means of a five-point Likert scale. The minimum score is '1', which represents the belief to strongly disagree with the statement provided, and the highest score is '5', which indicates that the respondent strongly agreed with the given statement. The number '2' on the Likert scale represents the notion to disagree, '3' represents a neutral standpoint and '4' signifies the notion to agree with the statement. The instruments used to measure 'internal locus of control' are:

ILC1	What happens to me is my own doing.	Strongly disagree	1	2	3	4	5	Strongly agree
ILC2	It is difficult for me to believe that chance or luck plays an important role in my life.	Strongly disagree	1	2	3	4	5	Strongly agree
ILC3	Becoming a success is a matter of hard work, luck has little or nothing to do with it.	Strongly disagree	1	2	3	4	5	Strongly agree
ILC4	There really is no such thing as 'luck'.	Strongly disagree	1	2	3	4	5	Strongly agree
ILC5	In my case getting what I want has little or nothing to do with luck.	Strongly disagree	1	2	3	4	5	Strongly agree

4.3.4.5 External Locus of Control Scale:

External locus of control is measured using a five-item scale adapted from Rotter's (1966) internal-external locus of control scale, by means of a five-point Likert scale. The minimum score is '1', which represents the belief to strongly disagree with the statement provided, and the highest score is '5', which indicates that the respondent strongly agreed with the given statement. The number '2' on the Likert scale represents the notion to disagree, '3' represents a neutral standpoint and '4' signifies the notion to agree with the statement. The instruments used to measure 'external locus of control' are:

ELC1	Sometimes I feel that I don't have enough control over the direction my life is taking.	Strongly disagree	1	2	3	4	5	Strongly agree
ELC2	Many times, I feel that I have little influence over the things that happen to me.	Strongly disagree	1	2	3	4	5	Strongly agree
ELC3	Getting a good job depends mainly on being in the right place at the right time.	Strongly disagree	1	2	3	4	5	Strongly agree
ELC4	Most people do not realise how much their lives are controlled by accidental happenings.	Strongly disagree	1	2	3	4	5	Strongly agree
ELC5	Majority of the time we might as well decide what to do by flipping a coin.	Strongly disagree	1	2	3	4	5	Strongly agree

4.3.4.6 Attitude toward Meat Consumption:

Attitudes towards meat consumption is measured using a nine-item scale adapted from Makanyeza (2014) attitude scale, by means of a five-point Likert scale. The minimum score is '1', which represents the belief to strongly disagree with the statement provided, and the highest score is '5', which indicates that the respondent strongly agreed with the given statement. The number '2' on the Likert scale represents the notion to disagree, '3' represents a neutral standpoint and '4' signifies the notion to agree with the statement. The instruments used to measure 'attitudes towards meat consumption' are:

AT1	It is important to me that I consume meat products.	Strongly disagree	1	2	3	4	5	Strongly agree
AT2	Meat products are safe to consume.	Strongly disagree	1	2	3	4	5	Strongly agree
AT3	If I can choose between meat products and non-meat products, I prefer a meat product.	Strongly disagree	1	2	3	4	5	Strongly agree

AT4	Meat products are the main things I look for when making food purchases.	Strongly disagree	1	2	3	4	5	Strongly agree
AT5	Meat products are appealing to me.	Strongly disagree	1	2	3	4	5	Strongly agree
AT6	Eating meat is good for my well-being.	Strongly disagree	1	2	3	4	5	Strongly agree
AT7	Meat products are of a high quality.	Strongly disagree	1	2	3	4	5	Strongly agree
AT8	Consuming meat products provide me with good value for money.	Strongly disagree	1	2	3	4	5	Strongly agree
AT9	Overall, I have a favourable attitude towards meat consumption.	Strongly disagree	1	2	3	4	5	Strongly agree

4.4 Data Analysis

4.4.1 Data Preparation

The first stage of the data analysis involves the data preparation process, once the questionnaires are completed. At this stage, a Microsoft Excel spreadsheet is used to capture the data gathered from the questionnaires, as well as for data cleansing purposes. After the data cleaning process was undertaken, it was discovered that a number of questionnaires were either incorrectly answered and/or incomplete. To ensure the quality of the outputs gained from the data analysis, eight (8) questionnaires were deemed incomplete and inaccurate and hence they could not be used. This left one-hundred and seventy two (172) questionnaires that were fully complete and used for data analysis purposes.

Once the data was cleaned, the next step involved coding the data using Statistical Package for the Social Sciences (SPSS) to allow for the facilitation of the data analysis as well as the generation of descriptive statistics and frequency profiles.

4.4.2 Descriptive statistics

According to Lohr (2009), descriptive statistics can be defined as the methods used to summarise information using charts, graphs, and tables, as well as equations of descriptive measures such as mean values, percentiles and measures of variation. By means of SPSS

statistical software, the descriptive statistics and the frequency table (data transformation) will be generated to analyse the normality composition of the data.

4.4.2.1 Measure of central location

This study utilised the most common measure of central location by using the average values, statistically referred to as the mean or arithmetic mean. In line with the view of Drost (2011), "the mean of n numbers is their sum divided by n".

4.4.2.2 Dispersion of variability

Standard deviation was used as the core measure of dispersion for this study. Drost (2011), contends that the amount that each value within a dataset deviates (or varies) from the mean represents the measure of standard deviation. It is expected that when the values within a dataset are close together the standard deviation values will be fairly small, and when dataset values are spread apart the standard deviation values are relatively large. As depicted in the formula below, the standard deviation of a sample equates to the symbol 's' and can be calculated as follows:

$$s = \sqrt{\frac{\sum(X - \bar{X})^2}{n - 1}}$$

s = sample standard deviation
$\sum$= sum of...
$\bar{X}$= sample mean
n = number of scores in sample.

4.4.3 Data analysis method

4.4.3.1 Structural Equation Modeling (SEM)

Once the data has been imported into Microsoft Excel (for coding purposes), and a file is created that can be imported into the statistical programme and is suitable for statistical analysis the next stage in the process of data analysis is to ultimately test the hypotheses of the study. This is done by means of Structural Equation Modeling (SEM). Research demonstrates that SEM has become increasingly popular as a means of statistical analysis, and that it has become customary in multiple business related research fields (Hair, Ringle, & Sarstedt, 2011; Sarstedt, Ringle, Smith, Reams, & Hair, 2014). Moreover, Hox and Bechger (2003) argue that SEM is

a powerful statistical technique that can be regarded as a combination of both factor analysis and regression (path) analysis, and it combines complex path models with latent constructs.

Fundamentally, SEM is defined as a statistical approach that enables hypotheses testing of the relationships between observed and latent variables and is said to encompass two main goals: the first being to gain insight into the variance of constructs within the specified model, and the second goal being to gain an understanding of the correlations between a set of variables (Hair, Ringle, & Sarstedt, PLS-SEM: Indeed a silver bullet, 2011). SEM is regarded as being highly flexible and comprehensive when compared to other traditional statistical approaches and more notably, SEM is a multivariate technique that incorporates both measured/observed variables and unobserved variables unlike other traditional statistical techniques that do not scrutinise the unobserved variables (latent constructs) (Hox & Bechger, 2003). Moreover, there is a growing preference for SEM as it allows for the testing of latent variables at an observation level within the outer model (i.e. measurement model), as well as its capability to test the relationships between latent variables in the inner model (i.e. structural model) on a theoretical level (Hair, Sarstedt, Ringle, & Mena, 2012).

Notably, the initial SEM approach utilised a covariance-based approach however, an alternative approach to SEM has been developed and is rising to prominence within various research and data analysis fields: this is known as the component-based approach to SEM using the Partial Least Squares (PLS) method by means of SmartPLS 3.0 statistical software (Hair , Sarstedt, Hopkins, & Kuppelwieser, 2014). The PLS approach to SEM is greatly valued in that it serves as a reliable measure of complex models whereby it requires fewer responses and assumptions concerning the distribution of data are not typically required (Sarsedt et al., 2014). Additionally, scholars contend that the PLS-SEM approach is commonly used in the field of marketing where it has grown in its attractiveness in many other disciplines (Henseler, Ringle, & Sinkovics, 2009). Hence, this study has employed the component-based SEM approach by means of the Partial Least Squares (PLS) method. Additional justification regarding this method of statistical analysis is based upon the capacity it has to analyse data in various conditions, where other methods may not be as suitable, such as: the ability to manage both formative and reflective research models, the ability to accurately gain insights from a smaller sample size, the measurement of complex models with a large number of latent and manifest variables, as well as its ability to statistically analyse data when it is not normally distributed (Hair, Sarstedt, Ringle, & Mena, 2012; Henseler, Ringle, & Sinkovics, 2009). Deducing from the above discussion, it is evident that the PLS-SEM approach will be greatly suitable for

statistical analysis of this study in an attempt to answer the previously stipulated research questions and determine the accuracy of the aforementioned hypotheses statements, also due to the particulars of the model and the sample used in this study.

4.4.3.2 Measurement Model Assessment

As per the analysis of the measurement model, otherwise referred to as the outer model, is it imperative to verify both the reliability and the validity of this model where this model looks to the relationships between the instruments and the variables of the study (Hair , Sarstedt, Hopkins, & Kuppelwieser, 2014). In essence, reliability refers to the level of consistency of the measurement and validity represents the degree to which the instruments employed as per the study are assessing what they are intended to measure. In this case, a PLS-SEM algorithm allowed for the verification of both reliability and validity of the measurement model which are discussed in more detail below.

4.4.3.2.1 Reliability

Reliability can be defined as "an accurate representation of the total population along with the extent to which the data gathered is consistent over time, and where (on condition that the results of the study can be replicated using a similar methodology) the research instrument is then deemed as being reliable" (Bennet & Williams, Mainstream Green: Moving Sustainability from Niche to Normal, 2011). Holistically, reliability looks toward the test-retest reliability as well as the internal consistency of the measures, ultimately speaking to the level of repeatability and the accuracy of a measurement process (Bennet & Williams, Mainstream Green: Moving Sustainability from Niche to Normal, 2011).

Reliability can be determined by using a number of different indicators: the Cronbach's Alpha (CA) value and the Composite Reliability (CR) values.

Cronbach's Alpha (CA)

The most commonly used method employed in the determination of internal consistency reliability is through the Cronbach's alpha coefficient value. According to Kimberlin and Winterstein (2008), internal consistency gauges the similarities between a set of items within the same test and consequently provides an estimate of the reliability of the measurement where is assumed that correlations between instruments measuring the same variable should be present. According to Morar, Venter and Chuchu (2015), the CA value should be above 0.6 to consider the instruments reliable whereas Hair et al. (2012) elucidates that the CA value should have a value of 0.7 or above to indicate the reliability of measures.

Cronbach's alpha can also be calculated by means of the following formula:

$$\alpha = K / (K-1)[1-(\sum \sigma_k^2 / \sigma_{total}^2)],$$

Composite Reliability (CR)

Utilising the Cronbach's alpha value as the only reliability measure can pose as a weakness, hence a further test for reliability will be done using the composite reliability. Akkucuk (2014), describes composite reliability as an evaluation of the degree to which indicators for latent constructs are similar in the measurement of a particular variable, and can be achieved by interpreting the true score variances and covariance's in the composite of indicator variables related to that variable, which is then divided by the sum of the total variance in the composite.

Scholars indicate that when conducting reliability analysis the CR value should surpass a value of 0.7, where it is a clear indication of a lack of reliability if the CR value is below 0.6 (Yang & Lai, 2010; Hair, Ringle, & Sarstedt, PLS-SEM: Indeed a silver bullet, 2011).

Using the CR, the internal reliability was assessed and can be calculated using the following formula:

(CR): $CR\eta = (\Sigma\lambda yi)\ 2/\ [(\Sigma\lambda yi)\ 2+ (\Sigma\varepsilon i)]$

Composite Reliability = (square of the summation of the factor loadings)/ {(square of the summation of the factor loadings) + (summation of error variances)}.

4.4.3.2.2 Validity

Fundamentally, validity is explained as the extent to which an instrument measures what it is intended to measure, nevertheless it is critical that the instruments are reliable before they can be deemed as valid (whereas they may be reliable irrespective of whether they are valid or not) (Kimberlin & Winterstein, 2008).

This study assessed both convergent and discriminant validity, discussed in more detail below.

Convergent Validity

According to Dean, Fashing, Gottschalk and Solli-Saether (2008), convergent validity is used as an indication that there is a moderate correlation between the instruments used for a particular variable, where poor convergent validity implies that there may be a need to utilise different, or more items for a particular variable. Morar, Venter and Chuchu (2015), highlight

that a good measure of convergent validity is through the use of average variance extracted statistics whereby these values are required to be above 0.5 to verify the existence of convergent validity between instruments of a variable. In layman's terms, this threshold of 0.5 tells the researcher that the measurement instruments used are measuring at least fifty percent (50%) of what they are anticipated to measure. Alumran, Hou, Sun, Yousef and Hurst (2014), stipulate that the AVE is the measurement of the error free variance of a set of items and is commonly used as a measure of shared variance within a latent construct. In a similar vein, Dean, Fahsing, Gottschalk and Solli-Saether (2008) refer to AVE as being a good measure of reliability and convergent validity as it looks at the variance extracted which indicates the overall amount of variance held by the indicators of a latent variable where the greater the AVE the more representative the indicators are of the latent variable. The recommended AVE value for a variable is greater than 0.5 as this implies that more than fifty percent (50%) of the item's variance is captured by the construct (Dean , Fahsing, Gottschalk, & Solli-Seather, 2008).

Average Variance Extracted (AVE) may be calculated by means of the following formula:

(AVE): $Vn = \sum \lambda yi^2 / (\sum \lambda yi^2 + \sum \dot{e}i)$

Average Variance Extracted = {(summation of the squared of factor loadings)/ {(summation of the squared of factor loadings) + (summation of error variances)}.

Convergent validity can be further measured by means of factor loadings (outer loadings) which serves as a sufficient condition of convergent validity if the values are also greater than 0.5 (Drost , 2011). Gye-Soo (2016), suggests that outer loadings should maintain a value greater than 0.7 to more accurately indicate convergent validity.

Discriminant Validity

As discussed by Dean, Fahsing, Gottschalk and Solli-Saether (2008), discriminant validity references the extent to which one variable and its instruments are different from all the other variables proposed in the study, confirming that each variable is measuring something different to the other variables. Using the Inter-construct correlation matrix, this study assessed the levels of discriminant validity where the values are required to be lower than 0.6 and in some cases lower than 0.85, which implies the existence of discriminant validity (Kimberlin & Winterstein, 2008).

Another means to assess the existence of discriminant validity is through the cross loadings approach which looks to whether a latent variable shares more variance with its own indicators

compared to other indicators within the model (Hair, Ringle, & Sarstedt, PLS-SEM: Indeed a silver bullet, 2011). This is done by looking to the average variance extracted versus the highest shared variance. Discriminant validity is verified if the average variance extracted for a variable is larger than the square of the shared variance (highest shared variance) of that particular variable (Nusair & Hua, 2010).

Global Goodness-of-fit

In line with the component based approach of structural equation modeling and the use of SmartPLS 3.0 statistical software, this approach is disadvantaged on the grounds that it does not provide model fit indices, where model fit looks toward the degree to which the data collected is fitting with the conceptual model, and it does not provide goodness of fit measures for the path model to the same extent that the covariance based approach statistical software's do (such as the analysis of a moment structures – AMOS) (Gye-Soo, 2016)**.**

However, when utilising SmartPLS 3.0 statistical software both the quality of the measurement model and the quality of the structural model can be accounted for using the R(square) values for the dependant variables that the software does provide (Tenenhaus, Vinzi, Chatelin, & Lauro, 2005). These values, along with the AVE values previously determined, can then be applied to the Global Goodness-of-fit formula to determine some measure of model fit. According to Tenenhaus, Vinzi, Chatelin and Lauro (2005), this value is required to be above 0.36 to verify the existence of model fit. The Global Goodness-of-fit formula is:

$$\text{Goodness-of-fit} = \sqrt{\left(\text{average of all AVE values} * \text{average of all } R^2\right)};$$

4.4.3.3 Structural Model Assessment

In order to assess the structural model (i.e. the inner model), the path coefficients will be extracted with the aim of analysing the strength and the effects of the predictor variables on the mediating variables and the outcome variables proposed in the conceptual model. Essentially the path coefficient values will be used to determine whether or not the proposed hypotheses are supported or not, as well as the relative strength of the various proposed relationships based on the magnitude of these values (Chinomona & Maziriri, 2017).

Furthermore, the significance of the proposed relationships of this study will be determined by means of the bootstrapping method (using SmartPLS 3.0 statistical software) to generate both the T-statistics as well as the P-values serving as the key measures of significance (Gye-Soo,

2016). The required thresholds for both the T-statistics and the P-values are: T-value must be equal to or greater than 1.96 and the P-values must be less than 0.05, and it is imperative that both these thresholds are met simultaneously indicate definite significance of the proposed relationships (Gye-Soo, 2016).

4.4.3.4 Testing for Mediation

The SmartPLS 3.0 statistical software enables the researcher to test for the mediation effect where insights towards the strength of the mediator variables are shown. Essentially, using a method called "bootstrapping the indirect effect", we are now able to generate the path-coefficient values to determine whether the mediating variables positively or negatively mediate the relationships between the independent (predictor) variables the dependant (outcome) variable (Chinomona & Maziriri, 2017). The strength of the mediation effect is determined by the magnitude of the path coefficient values for each specific indirect effect, generated using the 'consistent PLS' algorithm through SmartPLS 3.0 statistical software.

Additionally, the significance of the mediation effect will be determined using the 'consistent PLS bootstrapping method' (through SmartPLS 3.0), where the T-statistics and the P-values will be analysed, indicating whether the mediating variables significantly mediate the relationships between the independent (predictor) variables and the dependant (outcome) variable. The thresholds for the T-statistics and the P-values are required to be: T-value must be equal to or greater than 1.96 and the P-values must be less than 0.05, and it is imperative that both these thresholds are met simultaneously to indicate definite significance of the proposed relationships (Gye-Soo, 2016).

Summary

The chapter served to provide a detailed outline of the methodological approach adhered to by this study. This was inclusive of the research philosophy approach used, the research design, sampling design as well as the data collection approach. Secondly, this chapter provided immense detail on the data analysis approach that was used as per the statistical analysis of this study. This entailed the statistical approach used (SEM) as well as the approach to SEM (component-based approach) and the relevant statistical software used under this method, the quality of the measurement model and structural model and how these models will be assessed, as well as the procedure to endure when testing for the mediation effect of the proposed relationships.

The data analysis method described in this chapter is practically executed and presented in the following chapter.

Chapter five: Data Analysis, Discussion and Presentation of Findings

The previous chapter presented the overall methodology, data collection specifics and data analysis approach and procedures that will be undertaken in this current chapter. This chapter seeks to explore the various descriptive statistics before practically carrying out the component based approach of Structural Equation Modeling (SEM) to assess the reliability and validity of the data collected, as well as to test the various hypotheses proposed in the conceptual model of this study. Lastly, the mediation effect will be tested to explore the viability and significance of the mediating variables.

5.1 Descriptive Statistics

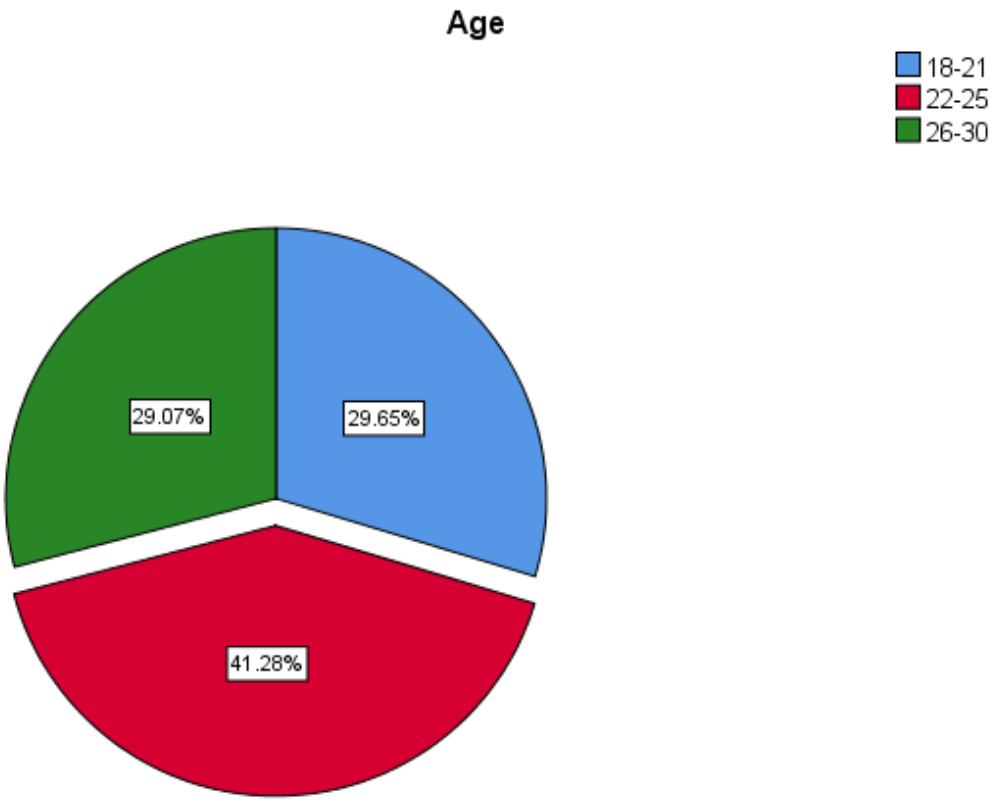
This section serves to illustrate and provide a brief analysis of the demographic data of the respondents used as part of this study. The frequency tables and pie charts illustrated below were generated by means of SPSS statistical software.

5.1.1 Age

The overall purpose of this study was to assess health consciousness, environmental concern and animal welfare as key predictors of consumers' locus of control and attitudes towards meat consumption.. Therefore, the age of the sample respondents were between 18 and 30 years old.

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-21	51	29.7	29.7	29.7
	22-25	71	41.3	41.3	70.9
	26-30	50	29.1	29.1	100.0
	Total	172	100.0	100.0	



The age pie chart and frequency table above indicates that out of a sample of 172 respondents, 51 (29.07%) were within the age group of 18 and 21. In addition, 71 respondents (41.28%) were within the age group of 22 and 25 which was evidently occupied the highest frequency of respondents within the sample. Lastly, 50 respondents (29.65%) were within the age group of 26 and 30.

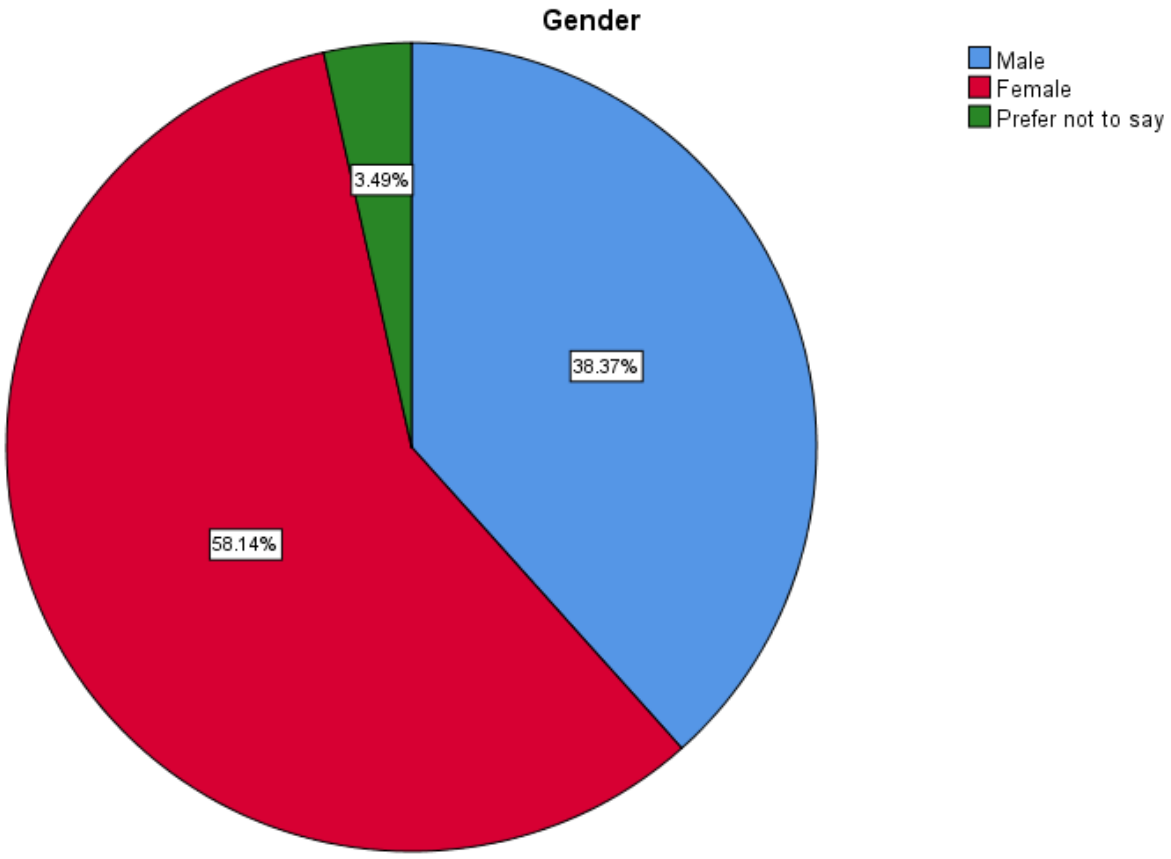
5.1.2 Gender

This study was not gender specific and hence utilised both male and female respondents for demographic profiling. The frequency table and pie chart below illustrate the gender of the 172 respondents from which the data was collected.

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	66	38.4	38.4	38.4
	Female	100	58.1	58.1	96.5
	Prefer not to say	6	3.5	3.5	100.0

	Total	172	100.0	100.0	



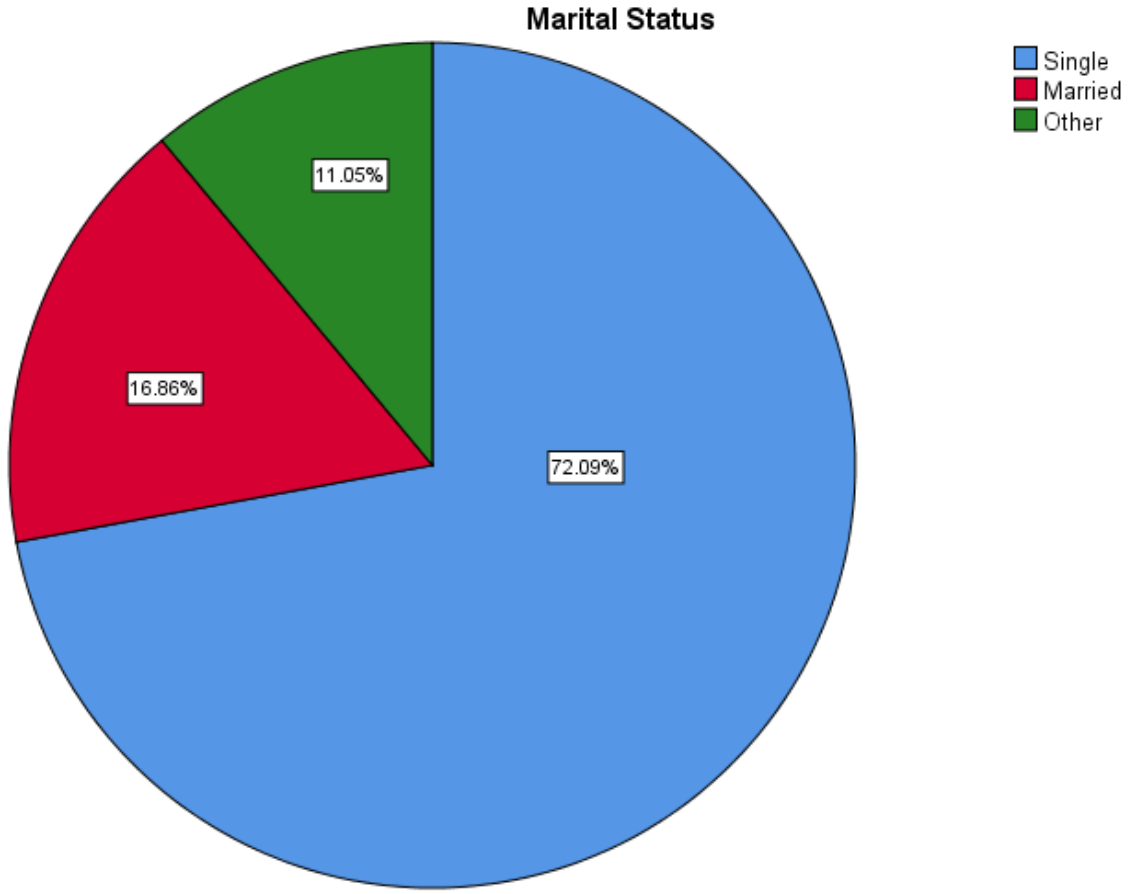
As depicted above, 66 respondents (38.37%) were male whereas 100 respondents (58.14%) were female. A small total of 6 respondents (3.49%) preferred not to disclose their gender.

5.1.3 Marital Status

In order to ethically assess the marital status of the respondents, three options were given: single, married or other. The frequency table and pie chart below illustrate the marital status of the respondents used in this study.

Marital Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Single	124	72.1	72.1	72.1
	Married	29	16.9	16.9	89.0
	Other	19	11.0	11.0	100.0
	Total	172	100.0	100.0	



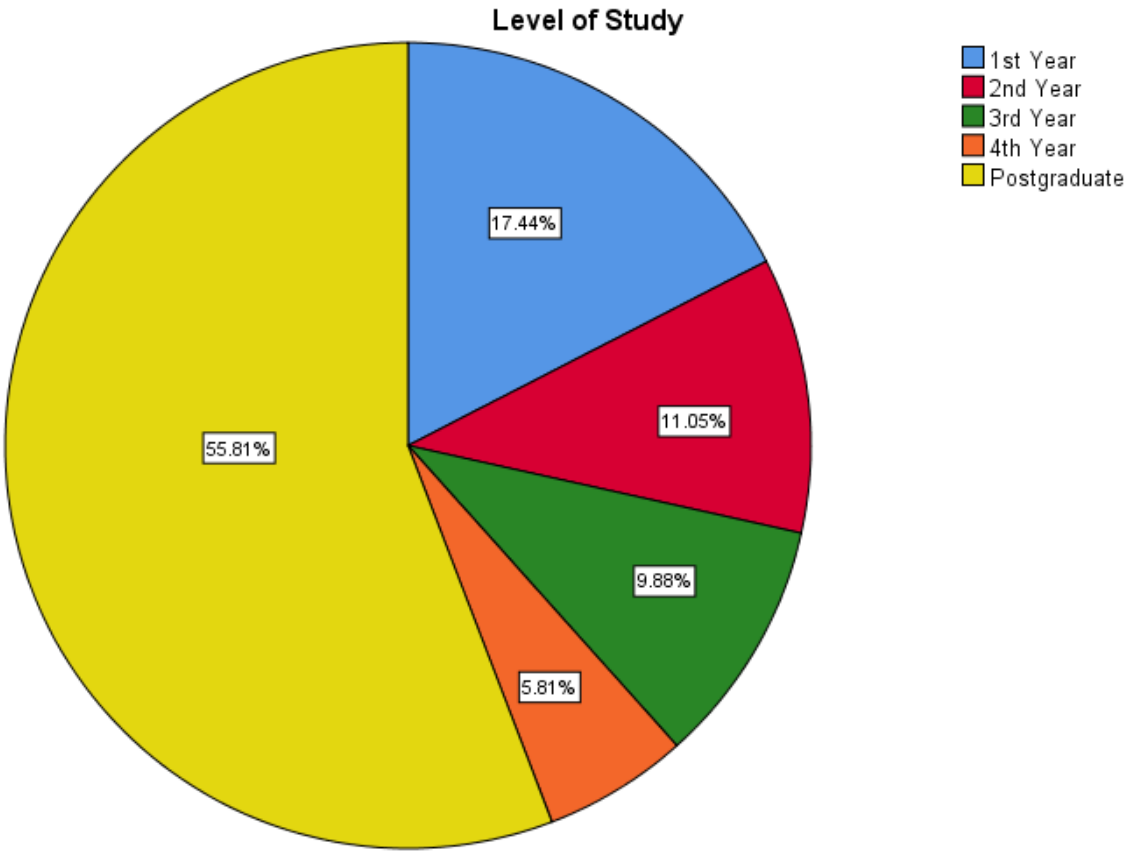
As demonstrated above, out of a total of 172 respondents, 124 (72.09%) were single, 29 (16.86%) were declared married and a total of 19 respondents (11.05%) chose to elect 'other' as their marital status.

5.1.4 Level of Study

On the premise that this study was conducted among university students, the researcher elected to use respondents level of study as a means to demographic profiling. This was inclusive of respondents either being in their 1st year, 2nd year, 3rd year, 4th year or postgraduate level of study. The frequency table and pie chart below demonstrates the descriptive statistics of the respondents level of study.

Level of Study

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1st Year	30	17.4	17.4	17.4
	2nd Year	19	11.0	11.0	28.5
	3rd Year	17	9.9	9.9	38.4
	4th Year	10	5.8	5.8	44.2
	Postgraduate	96	55.8	55.8	100.0
	Total	172	100.0	100.0	



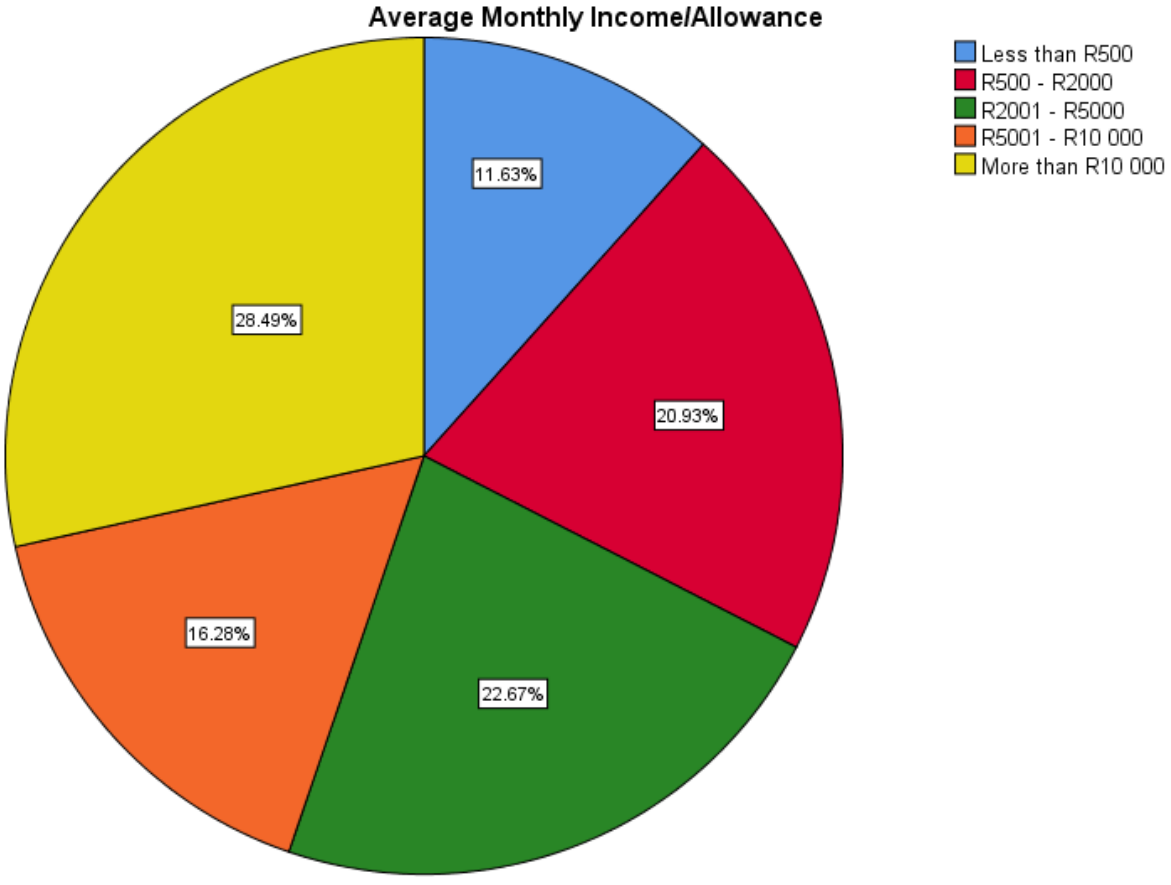
As depicted in the frequency table and pie chart above, 30 respondents (17.44%) were in their 1st year of study while only 19 respondents (11.05%) were in their 2nd year. A total of 17 respondents (9.88%) were in their 3rd year of study, where 10 respondents (5.81%) were in their 4th year of study. It is evident that the largest grouping of respondents used for this study were at the postgraduate level of study comprised of 96 respondents (55.81%).

5.1.5 Average Monthly Income/Allowance

Due to the nature of the study revolving around consumption practice of students, the researcher found that profiling the respondents by means of their monthly income or allowance is suitable and could potentially grant good insights and inferences. On the premise that the sample consisted of students only, the researcher provide five income brackets that each respondent was able to choose from to most accurately represent their income or allowance levels. These five brackets are presented in the frequency table and pie chart below.

Average Monthly Income/Allowance

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than R500	20	11.6	11.6	11.6
	R500 - R2000	36	20.9	20.9	32.6
	R2001 - R5000	39	22.7	22.7	55.2
	R5001 - R10 000	28	16.3	16.3	71.5
	More than R10 000	49	28.5	28.5	100.0
	Total	172	100.0	100.0	



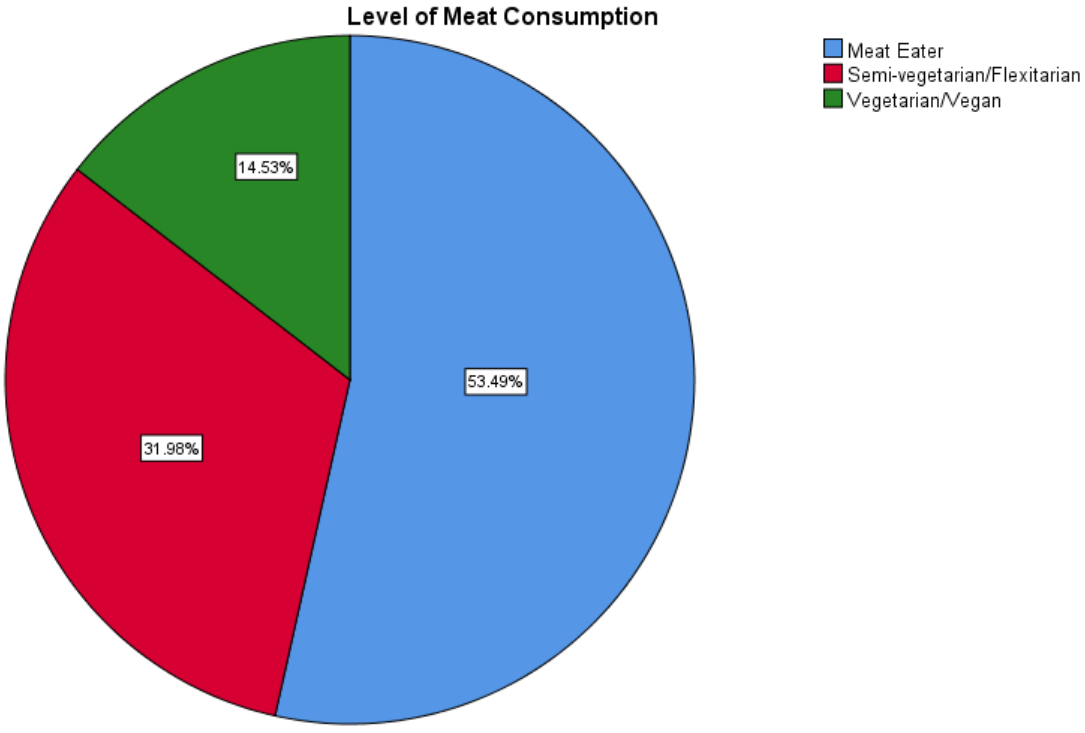
According to the frequency table and pie chart above, it is evident that out of 172 respondents utilised in this study, 20 respondents (11.63%) had a monthly income/allowance of less than R500. A collective of 36 respondents (20.93%) occupied a monthly income/allowance between R500 and R2000, and 39 respondents (22.67%) had a monthly income/allowance of between R2001 and R5000. Furthermore, 28 respondents (16.28%) were between R5001 and R10 000 monthly allowance/income levels and the largest frequency of 49 respondents (28.49%) contended that their monthly income/allowance is more than R10 000.

5.1.6 Level of Meat Consumption

As per the final demographic indicator, this study inherently assessed what level of meat consumption the participants of the study occupied. In this case, three logical options were available to respondents when it came to the profiling of one's level of meat consumption. Namely: meat-eater, semi-vegetarian (flexitarian – actively reduce meat from their diet) and vegetarian/vegan. The frequency table and pie chart below indicate the number of respondents that fell into each level of meat consumption.

Level of Meat Consumption

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Meat Eater	92	53.5	53.5	53.5
	Semi-vegetarian/Flexitarian	55	32.0	32.0	85.5
	Vegetarian/Vegan	25	14.5	14.5	100.0
	Total	172	100.0	100.0	



As depicted in the level of meat consumption frequency table and pie chart above, 92 respondents (53.49%) classified themselves as meat eaters. A further 55 respondents (31.98%) were considered semi-vegetarian/flexitarian and 25 respondents (14.53%) were vegetarian/vegan.

5.2 Descriptive statistics of the measurement instruments

This section seeks to explore the frequency tables of the various construct measurement instruments that the data presented. In this interpretation, the mean values and well as the standard deviation will be briefly discussed. The frequency tables below were generated by means of SPSS statistical software.

The mean values indicate what the average measure on the Likert scale was for all respondents, per construct item. Standard deviation refers to the extent to which the responses per instrument deviated from the mean value. Drost (2011), contends that this value should ideally be less than 1, however it is recommended that the standard deviation per instrument is lower than 2 to verify that there is no problem of outliers.

5.2.1 Health Consciousness

Health Consciousness

	HC1	HC2	HC3	HC4	HC5	HC6	HC7	HC8	HC9	HC10
Mean	**3.186**	**3.430**	**3.337**	**3.581**	**4.262**	**3.552**	**3.581**	**2.698**	**2.616**	**2.837**
Std. Deviation	**1.0870**	**1.0980**	**1.1302**	**1.0972**	**.8893**	**1.0444**	**1.3242**	**1.2290**	**1.1615**	**1.2270**

As demonstrated above, HC1, HC2, HC3, HC4, HC6 and HC7 achieved mean values that ranged from 3.18 to 3.58. This implies that for those statements, the majority of the respondents either encompassed a neutral standpoint, or they agreed with the statements provided. Item HC5 obtained the highest mean value of 4.26, insinuating that most of the respondents either agreed or strongly agreed with the statement. Lastly, HC8, HC9 and HC10 all had mean values between 2 and 3, implying that for these items most of the respondents disagreed, or they remained neutral.

The standard deviation for all of the health consciousness items was slightly above 1 but greatly below 2 and hence there is not an issue of outliers.

5.2.2 Animal Welfare

Animal Welfare

	AW1	AW2	AW3	AW4	AW5	AW6	AW7	AW8
Mean	**3.500**	**3.390**	**3.105**	**2.547**	**2.750**	**2.541**	**2.953**	**4.058**
Std. Deviation	**1.4489**	**1.4528**	**1.4988**	**1.4319**	**1.2893**	**1.2813**	**1.4542**	**1.0635**

As shown in the table above, the mean value for AW1, AW2 and AW3 are 3.5, 3.39, and 3.1. This implies that the majority of respondents either maintained a neutral standpoint, or they agreed with the given statements. Additionally, AW4, AW5, AW6 and AW7 all encompass mean values ranging between 2 and 3, implying that the majority of respondents disagreed or had a neutral standpoint for these items. AW8, however, had a mean value of 4.05 which indicates that most respondents agreed with this statement.

The standard deviation values for all of the animal welfare all lie between 1 and 2. This is below the recommended value and hence it can be concluded that this construct did not have an issue of outliers.

5.2.3 Environmental concern

Environmental Concern

	EC1	EC2	EC3	EC4	EC5	EC6	EC7	EC8
Mean	**3.186**	**3.203**	**3.099**	**3.279**	**2.657**	**3.262**	**2.860**	**3.442**
Std. Deviation	**1.2706**	**1.2793**	**1.4003**	**1.3778**	**1.3950**	**1.3404**	**1.1961**	**1.2101**

According to this environmental concern table above, the mean values ranged between 3 and 4 for majority of the instruments, except EC5 and EC7. Therefore, majority of the respondents either agreed with the statements provided or they remained neutral, whereas EC5 (2.65) and EC7 (2.86) indicates that most of the respondents disagreed or remained neutral toward those statements. The standard deviations for these items were all below 2, leaning closer toward a standard deviation of 1. Hence, there is no issue of outliers.

5.2.4 External Locus of control

External Locus of Control

	ELC1	ELC2	ELC3	ELC4	ELC5
Mean	**2.948**	**2.645**	**2.919**	**3.041**	**2.134**
Std. Deviation	**1.2200**	**1.1275**	**1.1966**	**1.0995**	**1.1392**

The external locus of control mean and standard deviation table above show that most instruments had a mean of between 2 and 3. This implies that majority of the respondents disagreed with the statements given, or they remained neutral. However, ELC5 had a mean value of 2.13, indicating that most respondents disagreed with this statement while ELC4 had a mean of 3.0 which shows that for this statement, most respondents had a neutral standpoint.

The standard deviation value were not below 1, but they were all greatly below 2 and hence there was no issue of outliers.

5.2.5 Internal Locus of Control

Internal Locus of Control

	ILC1	ILC2	ILC3	ILC4	ILC5
Mean	**3.936**	**3.128**	**3.797**	**2.750**	**3.360**
Std. Deviation	**1.0382**	**1.1526**	**1.1288**	**1.1804**	**1.0077**

This table above illustrates that most of the respondents agreed or had a neutral standpoint for the various statements. This is demonstrated by the mean values ranging from 3.1 to 3.9, with the exception of ILC4 that had a mean value of 2.7. This implies that in response to the statements provided for ILC4, majority of respondents disagreed or also had a neutral standpoint.

The standard deviation values are all below 2, ranging from 1.007 to 1.18, confirming that there is no issue of outliers for the internal locus of control construct.

5.2.6 Attitude toward Meat Consumption

Attitude toward Meat Consumption

	AT1	AT2	AT3	AT4	AT5	AT6	AT7	AT8	AT9
Mean	**3.000**	**3.238**	**3.180**	**2.843**	**3.331**	**3.209**	**2.942**	**2.680**	**3.215**
Std. Deviation	**1.3892**	**1.2501**	**1.4213**	**1.3653**	**1.3292**	**1.3123**	**1.2459**	**1.3054**	**1.4081**

Lastly, the frequency tables for the outcome variable (attitude toward meat consumption) were generated and are presented in the table above. This table shows that AT1, AT2, AT3, AT5, AT6, and AT9 had mean values ranging from 3.0 to 3.3. This indicates that majority of the respondents either agreed with the given statements or they remained neutral. The remainder of the instruments, AT4, AT7 and AT8 had mean values ranging from 2.6 to 2.9. This shows that for these instruments, most respondents elected to disagree or they had a neutral view.

The standard deviations are all below 2 with most being slightly above 1, therefore this construct did not have an issue of outliers.

The following section of this chapter seeks to present the statistical analysis of the data collected for this study. Specifically, it seeks to practically undertake and demonstrate the component based approach to Structural Equation Modeling (SEM) using SmartPLS 3.

5.3 Structural Equation Modeling (SEM)

Table 3: Outer Loadings (Factor Loadings)

	AT	AW	EC	ELC	HC	ILC
AT1	0.895					
AT2	0.822					
AT3	0.9					
AT4	0.86					
AT5	0.907					
AT6	0.862					
AT7	0.875					
AT8	0.796					
AT9	0.913					
AW1		0.652				
AW2		0.702				
AW3		0.751				
AW4		0.855				
AW5		-0.572				
AW6		-0.587				
AW7		0.865				
AW8		0.504				
EC1			0.863			
EC2			0.828			
EC3			0.824			
EC4			0.849			
EC5			0.741			
EC6			0.755			
EC7			-0.425			
EC8			0.688			
ELC1				0.695		
ELC2				0.717		
ELC3				0.631		
ELC4				0.771		
ELC5				0.781		
HC1					0.588	
HC10					-0.644	
HC2					0.728	
HC3					0.743	
HC4					0.794	
HC5					0.555	
HC6					0.769	
HC7					-0.44	
HC8					-0.593	
HC9					-0.633	
ILC1						0.524
ILC2						0.599
ILC3						0.716
ILC4						0.765
ILC5						0.707

According to Chinomona and Maziriri (2017), the recommended threshold for the outer loadings (factor loadings) of each measurement instrument are required to be 0.7 to be deemed suitable to progress with the study. Outer loadings (factor loadings) are also a measure of convergent validity that will illustrated and discussed further in this chapter. As per the covariance based approach to SEM, authors suggest that outer loadings should be no less than 0.5, and in the case that they are below 0.5 those particular instruments should be removed (Schreiber, Stage, King, Nora, & Barlow, 2006). However, this study strives to maintain a threshold of 0.7 for the outer loadings generated through SmartPLS statistical software.

The outer loadings in table 3 above shows that the indicators AW5, AW6, and AW8 do not meet the stipulated threshold of 0.7, with outer loadings of -0.572, -0.587 and 0.505. Hence, these instruments have been removed from the measurement model. The outer loadings in table 3 above further demonstrates that EC7 has an outer loading value of -0.425, which does not meet the required threshold of 0.7 and thus this instrument will be removed going forward. Moreover, table 3 above indicates that ELC3 as well as ILC1 and ILC2 have outer loadings of 0.631, 0.524 and 0.599 and hence they will also be removed. Lastly and more notably, the construct of health consciousness had five instruments that did not meet the recommended threshold, namely: HC5, HC7, HC8, HC9 and HC10. These instruments possessed values of 0.555, -0.44, -0.593, -0.633, and -0.644 and were therefore removed from the measurement model.

After removing the indicators with outer loadings that did not meet the threshold, the model was run again and the following outer loadings were generated:

Table 4: Outer Loadings (Factor Loadings) (re-run)

	AT	AW	EC	ELC	HC	ILC
AT1	0.894					
AT2	0.823					
AT3	0.899					
AT4	0.858					
AT5	0.906					
AT6	0.862					
AT7	0.876					
AT8	0.798					
AT9	0.913					
AW1		0.651				
AW2		0.724				
AW3		0.782				
AW4		0.877				
AW7		0.879				
EC1			0.852			
EC2			0.816			
EC3			0.82			
EC4			0.847			
EC5			0.741			
EC6			0.768			
EC8			0.703			
ELC1				0.714		
ELC2				0.712		
ELC4				0.776		
ELC5				0.782		
HC1					0.669	
HC2					0.773	
HC3					0.792	
HC4					0.864	
HC6					0.828	
ILC3						0.776
ILC4						0.868
ILC5						0.715

As illustrated in the outer loadings (re-run) table 4 above, all the values now meet the threshold of 0.7 (with the exception of AW1 and HC1 – considered marginally acceptable) and hence these instruments will be used in the further analysis of the data collected for this study. According to Gye-Soo (2016), the outer loadings should maintain a value of 0.7 to verify the existence of convergent validity. In table 4 above, there are two loadings that are slightly below

0.7. These are AW1 (0.651) and HC1 (0.669), with values that are below 0.7 by a fraction, hence it may be argued that although these values are below the threshold, they are still well above 0.5 and they are not far off from 0.7 allowing them to be considered marginally acceptable for the purpose of this study. The outer loadings will be discussed later in the chapter when demonstrating the existence of convergent validity. Conclusively, the instruments used in the measurement model for the outer loadings re-run will be used in the rest of the analysis undertaken in this chapter.

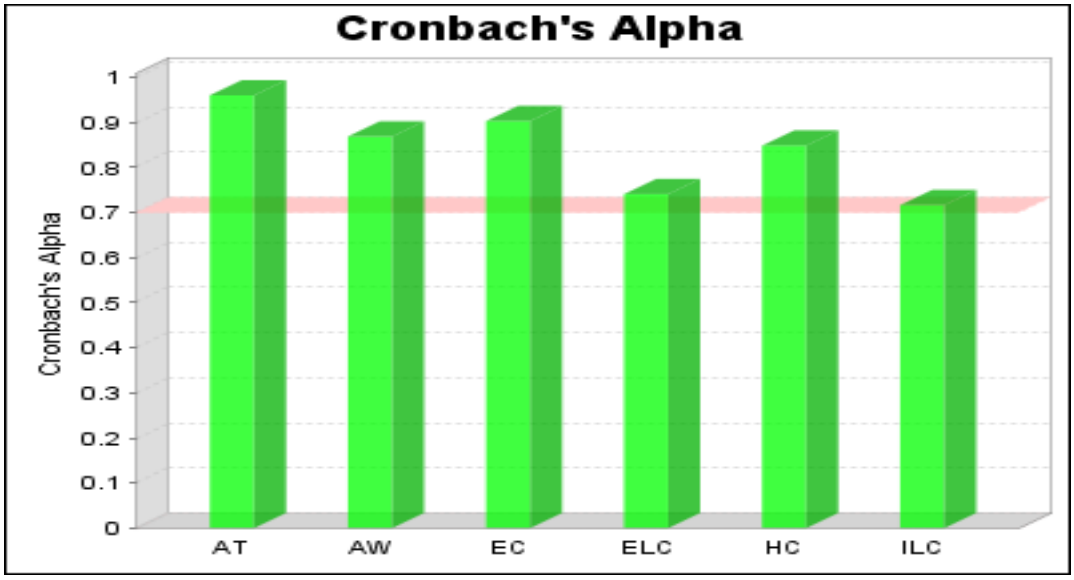
5.4 Reliability

Table 5: Cronbach's Alpha and Composite Reliability

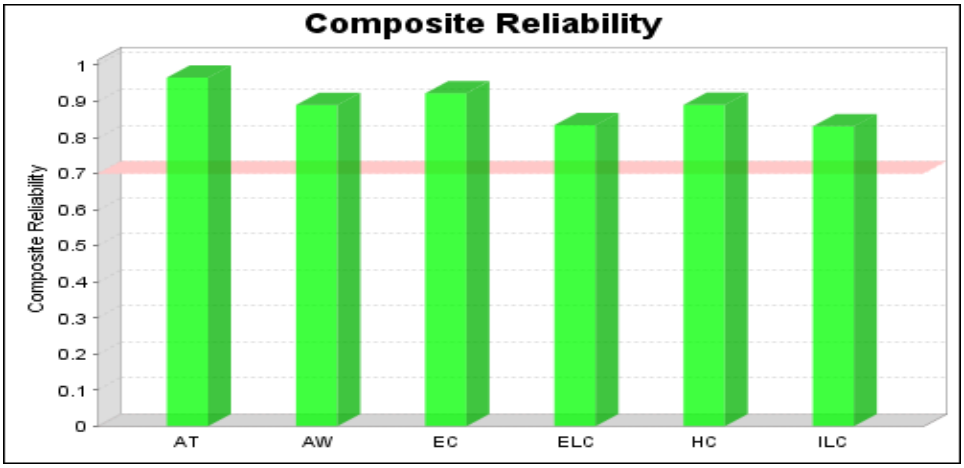
	Cronbach's Alpha	rho_A	**Composite Reliability**
AT	**0.96**	0.965	**0.966**
AW	**0.869**	0.904	**0.89**
EC	**0.903**	0.914	**0.922**
ELC	**0.741**	0.756	**0.834**
HC	**0.849**	0.892	**0.89**
ILC	**0.717**	0.763	**0.831**

Table 5 above shows both the Cronbach's Alpha (CA) values and the Composite Reliability (CR) values for each research variable in this study. Morar, Venter and Chuchu (2015), are of the view that CA values are a necessary condition and are required to be greater than 0.6 to indicate reliability of the measures used. Hair et al., (2012) contends that the CA values should be above 0.7 to verify reliability of the measures used.

As illustrated in table 5 above, all of the Cronbach's Alpha values meet the threshold of 0.7, ranging from ILC – 0.717 to AT – 0.96. Accordingly, it is confirmed that the measures used in this study are reliable and reliability can thus be confirmed. The bar chart below graphically illustrates the Cronbach's Alpha values for each research variable (generated through SmartPLS 3):



The second and sufficient condition in an attempt to define the instrument reliability of the study is through the Composite Reliability (CR) values of all research variables. The CR values are shown in *table 5* above, alongside the Cronbach's Alpha values. Gye-Soo (2016) suggests that if the CR values are greater than 0.6, this implies a high level of internal consistency. Furthermore, Yang and Lai (2010) concur that when conducting reliability analysis, the CA value is advised to exceed a value of 0.7 which was clearly achieved as highlighted in *table 5* above. The CR indicator values are extensively higher than both 0.6 and 0.7 with values ranging from ILC – 0.831 to AT – 0.966 and hence internal consistency and reliability can further verified for this study. The bar chart below graphically represents the composite reliability values that were generated as per each research variable used in this study (generated through SmartPLS 3):



5.5 Validity

5.5.1 Discriminant Validity

Chinomona and Maziriri (2017), elucidate that a viable method used to verify the existence of discriminant validity of the research constructs is by assessing the correlations among existing variables to determine whether the value is below 0.6. In certain conditions, a correlation value of below 0.85 is considered marginally acceptable in the verification of discriminant validity (Morar, Venter, & Chuchu, 2015). This evaluation is done using the inter-construct correlation matrix generated through SmartPLS 3 and is demonstrated below:

Table 6: Inter-construct correlation matrix

Variables	**AT**	**AW**	**EC**	**ELC**	**HC**	**ILC**
AT	1					
AW	0.684	1				
EC	0.756	0.614	1			
ELC	0.29	0.165	0.204	1		
HC	0.406	0.257	0.43	0.309	1	
ILC	0.162	0.137	0.29	0.455	0.271	1

When utilising SmartPLS statistical software, this matrix is referred to as the Heterotrait-Monotrait Ratio (HTMT) used as an indication of discriminant validity. The thresholds for the HTMT ratio are below 0.6 and marginally acceptable at a conservative value below 0.85 (Hair , Sarstedt, Hopkins, & Kuppelwieser, 2014). *Table 6* above specifies that all the correlations between constructs are below the conservatively acceptable value of 0.85 and therefore we conclude that discriminant validity had been established. However, according to Chinomona and Maziriri (2017), the lower the correlation between two variables the greater the existence of discriminant validity and hence it would be ideal to meet a threshold of 0.6. Based on the above figures in the matrix table, it is evident that majority of the values are below 0.6 with the exception of three correlations. These are: AW and AT (0.684), EC and AT (0.756), EC and AW (0.614). Although these values are above 0.6, they are still below the conservative threshold of 0.85 and therefore can be deemed marginally acceptable for this research study.

Deducing from the above interpretation of the inter-construct correlation matrix (HTMT ratio) as a single measure, it is verified that there is the existence of discriminant validity of the measurement instruments used for each variable.

In addition to the above interpretation, a further measure of discriminant validity can be achieve by means of the Average Variance Extracted (AVE) values. When looking to the AVE values, a value of 0.5 and above indicates that it is a satisfactory measure (Chinomona & Maziriri, 2017). Furthermore, the AVE values of a construct are required to be greater than the shared variance values for all research variables to indicate the existence of discriminant validity (Chinomona & Maziriri, 2017). *Table 7* below presents the AVE values alongside each respective Highest Shared Variance value.

Table 7: AVE and Highest Shared Variance

Research Variable	**Average Variance Extracted (AVE)**	**Highest Shared Variance**
AT	0.758	0.57
AW	0.62	0.47
EC	0.631	0.57
ELC	0.558	0.21
HC	0.621	0.18
ILC	0.622	0.21

The highest shared variance was calculated by means of squaring correlations among constructs. More specifically, squaring the highest construct value on vertical correlations shown on the matrix. Accordingly, the highest shared variance between variables is compared to the AVE values of each variable as an additional confirmation of the existence of discriminant validity (Nusair & Hua, 2010). Discriminant validity is verified if the highest shared variance is less than the AVE value for each variable (AVE is required to be higher than the highest shared variance) (Nusair & Hua, 2010). According to *table 7* above, it is evident that when comparing the highest shared variance to that of the AVE per variable, all of the AVE values are greater than the highest shared variance (square of the correlations between constructs) and therefore is further concluded that discriminant validity has been established between all variables.

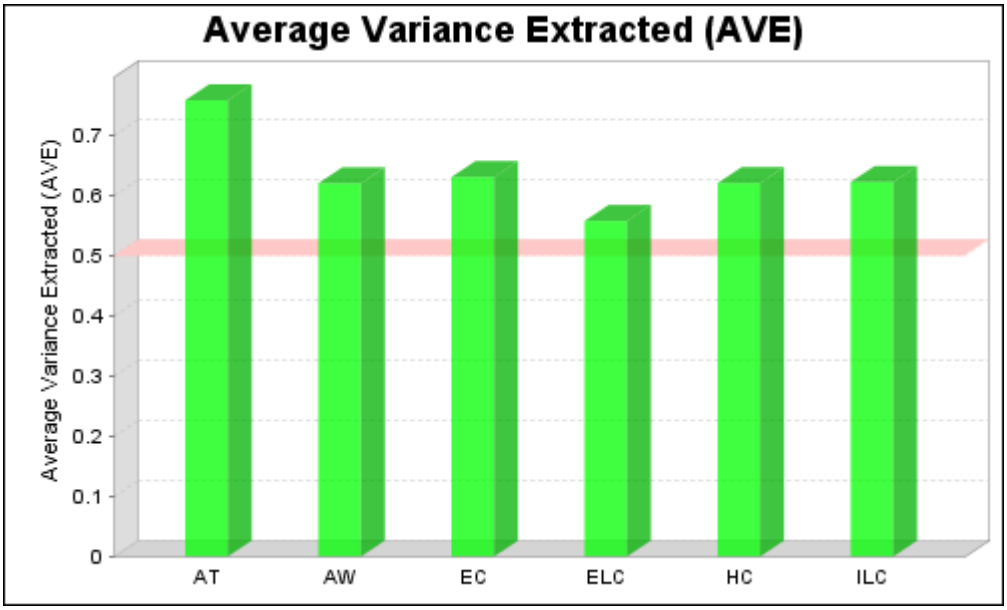
5.5.2 Convergent Validity

In order to verify the existence of convergent validity the Average Variance Extracted (AVE) values were analysed as well as the outer loadings (factor loadings) that were briefly interpreted earlier in the chapter.

As aforementioned, the AVE values are recommended to meet a threshold of above 0.5 (Morar, Venter, & Chuchu, 2015). The AVE values (along with providing insight to both reliability and discriminant validity – through a highest shared variance comparison) can also be used to determine how well a latent variable is being represented by its instruments, hence these instruments would be required to measure at least fifty percent of what they are intended to measure (Chinomona & Maziriri, 2017). According to the bar chart below and the AVE values listed alongside, it is evident that all the AVE values meet the threshold of 0.5 and hence they contribute toward the verification of convergent validity.

Table 7: (AVE only)

Research Variable	Average Variance Extracted (AVE)
AT	0.758
AW	0.62
EC	0.631
ELC	0.558
HC	0.621
ILC	0.622



Convergent validity is more accurately indicated by means of outer loadings (factor loadings). As aforementioned, factor loadings are recommended to be above 0.7 to indicate the existence of convergent validity (Gye-Soo, 2016). Moreover, Chinomona and Maziriri (2017) suggest that a conservative threshold of 0.5 for each factor loading would also conclude that convergent validity has been established. According to *table 4* presented earlier in this chapter, all of the values are above the conservative threshold of 0.5, however two constructs are slightly below 0.7. Namely: AW1 (0.651) and HC1 (0.669). These were close to the threshold of 0.7 and hence they are deemed as being marginally acceptable in this study. The remainder of the outer loadings (factor loadings) are all above 0.7 with values ranging from 0.703 to 0.913, and hence convergent validity can be confirmed.

Based on the above interpretation of the AVE values as well as the outer loadings (factor loadings), it is holistically concluded that convergent validity has been established.

Global Goodness-of-fit Calculation

The component based approach to structural equation modeling utilises SmartPLS 3 statistical software at this stage. The use of SmartPLS 3 is disadvantaged, as compared to covariance based approaches to structural equation modeling (such as AMOS), in the sense that it does not provide an extensive selection of model fit indices (Gye-Soo, 2016). Although this may pose as a disadvantage to this component based approach to SEM, SmartPLS does provide R(square) values for the dependant variables which can then be applied to the global goodness-of-fit formula in order to account for both the quality of the measurement model and the quality of the structural model (Tenenhaus, Vinzi, Chatelin, & Lauro, 2005). The R(square) values generated by SmartPLS 3 are:

Dependant Variables	R Square
AT	0.072
ELC	0.082
ILC	0.086

$$\text{Goodness-of-fit} = \sqrt{\left(\text{average of all AVE values} * \text{average of all } R^2\right)}:$$

Average of all AVE values = (0.758 + 0.62 + 0.631 + 0.558 + 0.621 + 0.622) / 6 = **0.635**

Average of all R(square) values = (0.072 + 0.082 + 0.086) / 3 = **0.08**

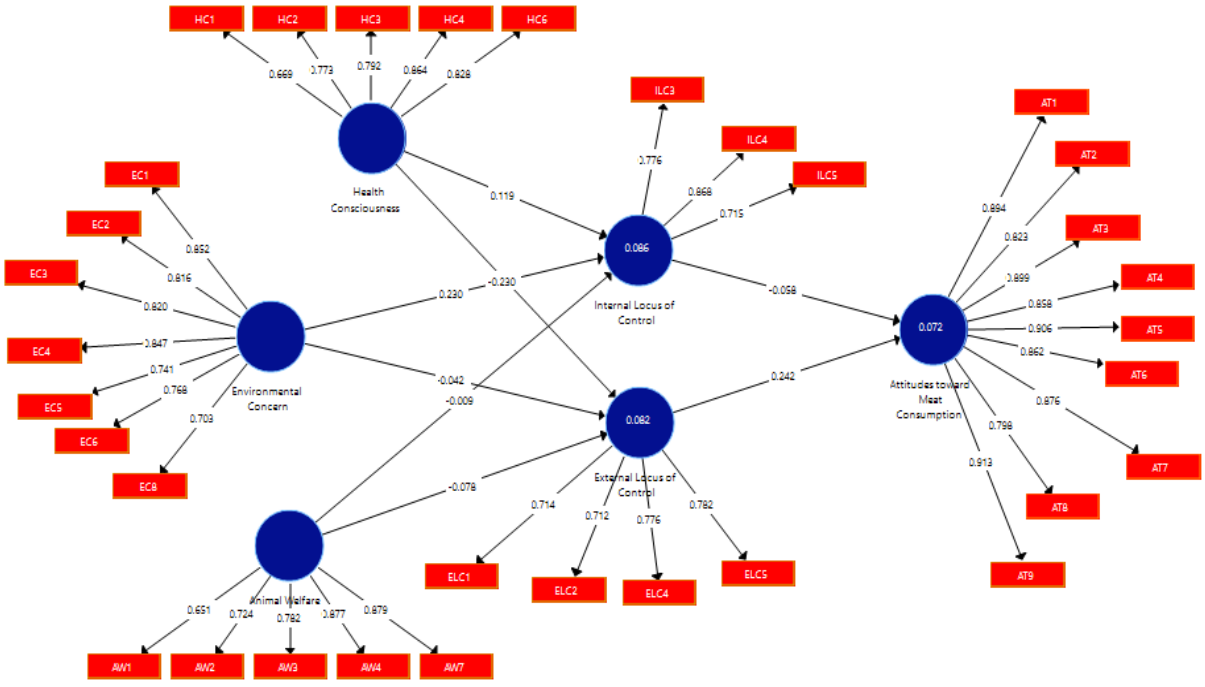
(average of all AVE values*average of all R(square) values) = (0.635*0.08) = **0.05**

Square root of (0.05) = 0.22

<u>Therefore: Goodness-of-fit = 0.22</u>

According to the calculation carried out above, the Goodness-of-fit value is equal to 0.22. Scholars indicate that this calculation should result in a value that is greater than 0.37 to indicate model fit (Tenenhaus, Vinzi, Chatelin, & Lauro, 2005). Hence, according to this calculation it cannot confidently be argued that there is a strong model fit. Model fit refers to the extent to which the data collected is fitting with the conceptual model. Hence, this can provide insights to other researchers when analysing a model similar to the one utilised as part of this study in order to pave way for future research considerations.

Figure 5: Measurement Model - SmartPLS



5.6 Structural Model Assessment

5.6.1 Path Coefficients

Table 8: Path Coefficients

	AT	AW	EC	ELC	HC	ILC
Attitudes towards Meat Consumption (AT)						
Animal Welfare (AW)				-0.078		-0.009
Environmental Concern (EC)				-0.042		0.23
External Locus of Control (ELC)	0.242					
Health Consciousness (HC)				-0.23		0.119
Internal Locus of Control (ILC)	-0.058					

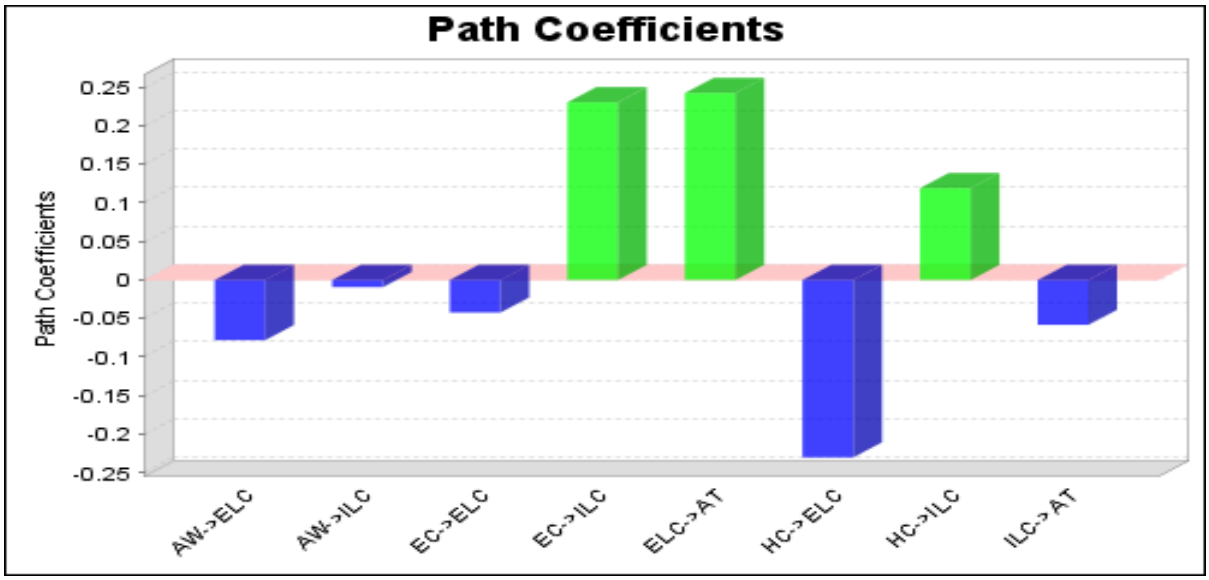


Table 8 above reveals the path coefficient values for the various relationships proposed as per the conceptual model. The path coefficient values serve to determine whether the proposed hypotheses statements are in fact supported or whether they are not supported, as well as providing an indication as to the strength of these relationships based on the magnitude of the path coefficient values between predictor, mediator and outcome variables (Chinomona & Maziriri, 2017). The path coefficient values will be discussed and analysed in the section below to determine the strongest and weakest relationships of this study.

Health Consciousness → Internal Locus of Control

H1: There is a positive relationship between health consciousness and internal locus of control.

Table 8 above shows that a consumers' level of health consciousness greatly influences whether they have an internal locus of control. This is reflected by the path coefficient value of 0.119, which is a positive coefficient, and hence this hypothesis is supported.

Health Consciousness → External Locus of Control

H2: There is a negative relationship between health consciousness and external locus of control

The path coefficient value demonstrated in *table 8* and the bar chart above provide a path coefficient of -0.23 between these two variables. This path coefficient shows a stronger relationship than that of H1 and based on the negative value, it can be concluded that this hypothesis is supported. That is, there is a negative relationship between health consciousness and external locus of control.

Environmental Concern → Internal Locus of Control

H3: There is a positive relationship between environmental concern and internal locus of control.

The path coefficient for this relationship is 0.23, as reflected in *table 8* above. This implies that the relationship between the predictor environmental concern and one of the mediator variables, internal locus of control, is both positive and supported as proposed in the conceptual model. Accordingly, there is a strong, positive relationship between environmental concern and internal locus of control.

Environmental Concern → External Locus of Control

H4: There is a negative relationship between environmental concern and external locus of control.

The relationship between environmental concern and external locus of control was proposed and argued to be a negative relationship. *Table 8* above shows that this relationship attained a path coefficient value of -0.042. Although this relationship is not very strong (as indicated by the magnitude of the path coefficient value), it is most definitely supported. Therefore, it is verified that there is a negative relationship between environmental concern and external locus of control.

Animal Welfare → Internal Locus of Control

H5: There is a positive relationship between animal welfare and internal locus of control.

According to the path coefficient *table 8* above, the path coefficient value between animal welfare and internal locus of control is -0.009. Therefore it is concluded that this relationship is not supported as the postulated relationship was positive, however the negative path coefficient value indicates a negative relationship, even though it is a very marginally negative relationship (weak relationship). H5 is thus unsupported.

Animal Welfare → External Locus of Control

H6: There is a negative relationship between animal welfare and external locus of control.

The relationship between animal welfare and external locus of control obtained a path coefficient value of -0.078. This reveals that there is a relatively weak relationship between these two variables, however this relationship is supported as proposed in the conceptual model. Therefore, there is a clear negative relationship between animal welfare and external locus of control.

Internal Locus of Control → Attitudes toward Meat Consumption

H7: There is a positive relationship between internal locus of control and attitudes towards meat consumption.

The path coefficient *table 8* above indicates that the path coefficient value between internal locus of control and attitudes towards meat consumption is -0.058. This relationship was proposed as a positive relationship, and hence it is not supported. Therefore, it is concluded that internal locus of control negatively affects one's attitude towards meat consumption. This relationship is relatively weak due to the magnitude of the path coefficient value.

External Locus of Control → Attitudes toward Meat Consumption

H8: There is a positive relationship between external locus of control and attitudes towards meat consumption.

According to *table 8* above, this relationship has a path coefficient value of 0.242. This implies that external locus of control has a strong effect on consumers' attitudes towards meat consumption. Based on the positive path coefficient value of 0.242 it can be concluded that this relationship, as it was proposed in the conceptual model, is strongly supported.

Deducing from the above interpretation of the various path coefficient values for the proposed relationships in this study, it is clear that the weakest relationship is between animal welfare and internal locus of control. This relationship had a path coefficient value of -0.009, which not only is negative and unsupported, but it is also the weakest relationship as per the magnitude of this value. Contrastingly, the highest path coefficient value and strongest relationship lies between external locus of control and attitudes toward meat consumption, with a path coefficient of 0.242. This was the highest path coefficient out of all of the proposed relationships.

Moreover, the above interpretation of the path coefficient values confirms that environmental concern was the strongest predictor variable of internal locus of control (mediator) with a value of 0.23. Health consciousness was the second strongest predictor variable for internal locus of control (0.119) and animal welfare was deemed not to be a good predictor of internal locus of control with a negative path value of -0.009.

Health consciousness was the strongest predictor of external locus of control (mediator) with a path coefficient of -0.23 (this relationship was proposed to be negative). The second strongest predictor variable of external locus of control was animal welfare with a path value of -0.078 and the weakest predictor of external locus of control is that of environmental concern with a path value of -0.042. All the relationships between the predictor variables and one of the mediating variables – external locus of control – were proposed to be negative and they were all supported.

As per the path coefficient *table 8* above, the stronger relationship between both mediator variables and the outcome variable was between external locus of control and attitudes towards meat consumption with a path coefficient value of 0.242. Whereas the weaker relationship lay between the other mediating variable – internal locus of control – and attitudes toward meat consumption with a path coefficient value that was in fact negative and unsupported and it was a fairly weak path coefficient value (-0.058).

The following section of this chapter delves into the significance of each proposed hypotheses in order to build on the testing of these various hypotheses statements.

5.6.2 T-Statistics (T-Values) and P-Values

In accordance with the view of Gye-Soo (2016), the significance of the proposed relationships can be determined by means of SmartPLS 3 statistical software. This is achieve by using the bootstrapping method to generate both the T-Statistics and the P-Values as key determinants of significance levels where the required thresholds for both the t-statistics and p-values to indicate a significant relationship are: T-Statistic must be equal to or greater than 1.96 and P-Value must be less than 0.05 (Gye-Soo, 2016). It is imperative that both these thresholds are met simultaneously to show definite significance of the proposed relationships within the study. *Table 9* below reflects both the T-Statistics and P-Values of the proposed relationships.

Table 9: T-Statistics and P-Values

	T Statistics (|O/STDEV|)	**P Values**
Animal Welfare -> External locus of control	0.748	0.455
Animal Welfare -> Internal locus of control	0.084	0.933
Environmental Concern -> External locus of control	0.408	0.683
Environmental Concern -> Internal locus of control	2.215	0.027
External locus of control -> Attitudes towards meat consumtion	3.249	0.001
Health Consciousness -> External locus of control	2.853	0.005
Health Consciousness -> Internal locus of control	1.17	0.242
Internal locus of control -> Attitudes towards meat consumtion	0.531	0.595

Health Consciousness → Internal Locus of Control

H1: There is a positive relationship between health consciousness and internal locus of control.

Table 9 above shows that this relationship is not significant as indicated by the T-value of 1.17 and P-value of 0.242. These values are not within the required thresholds and therefore the proposed relationship between health consciousness and internal locus of control is not significant even though it is supported (as per the path values).

Health Consciousness → External Locus of Control

H2: There is a negative relationship between health consciousness and external locus of control

The T-statistics and P-values for this proposed relationship further confirm (along with the path coefficient values previously analysed) that the relationship between health consciousness and external locus of control is in fact very significant as well as supported. The T-statistic of 2.85 and P-value of 0.005 both meet the required thresholds and thus this relationship is significant.

Environmental Concern → Internal Locus of Control

H3: There is a positive relationship between environmental concern and internal locus of control.

Environmental concern and internal locus of control, as shown in *table 9* above, possess a T-statistic of 2.215 and a P-value of 0.027 which both meet the required thresholds. This implies that not only is this relationship supported, but it is also a highly significant relationship.

Environmental Concern → External Locus of Control

H4: There is a negative relationship between environmental concern and external locus of control.

As per *table 9* above, this relationship obtained a T-statistic of 0.408 and a P-value of 0.683, which are both far away from the desired threshold previously stipulated. Therefore, this relationship may be supported (as per the path coefficient values), however it is not significant.

Animal Welfare → Internal Locus of Control

H5: There is a positive relationship between animal welfare and internal locus of control.

The relationship between animal welfare and internal locus of control was deemed to be unsupported as per the interpretation of the path coefficient values of this proposed relationship. The T-statistics and P-value for this relationship, as show in *table 9*, are 0.084 (T-value) and 0.933 (P-value) which do not meet the required threshold and thus this relationship is concluded as being both unsupported and not significant.

Animal Welfare → External Locus of Control

H6: There is a negative relationship between animal welfare and external locus of control.

Animal welfare and external locus of control, according to *table 9* above, have a T-statistic of 0.748 and a P-value of 0.455 which are both clear indications that this relationship is not

significant as they do not meet the threshold requirements. This relationship was considered to be supported based on the path coefficient value and therefore it can be concluded that the relationship between animal welfare and external locus of control is supported but it is not significant.

Internal Locus of Control → Attitudes toward Meat Consumption

H7: There is a positive relationship between internal locus of control and attitudes towards meat consumption.

As illustrated in *table 9* above, this relationship had a T-statistic of 0.531 and a P-value of 0.595 which evidently does not meet the required threshold. This relationship between internal locus of control and attitudes toward meat consumption has been previously identified as an unsupported relationship (as per the path coefficient values). Thus, this relationship is unsupported and it is not significant.

External Locus of Control → Attitudes toward Meat Consumption

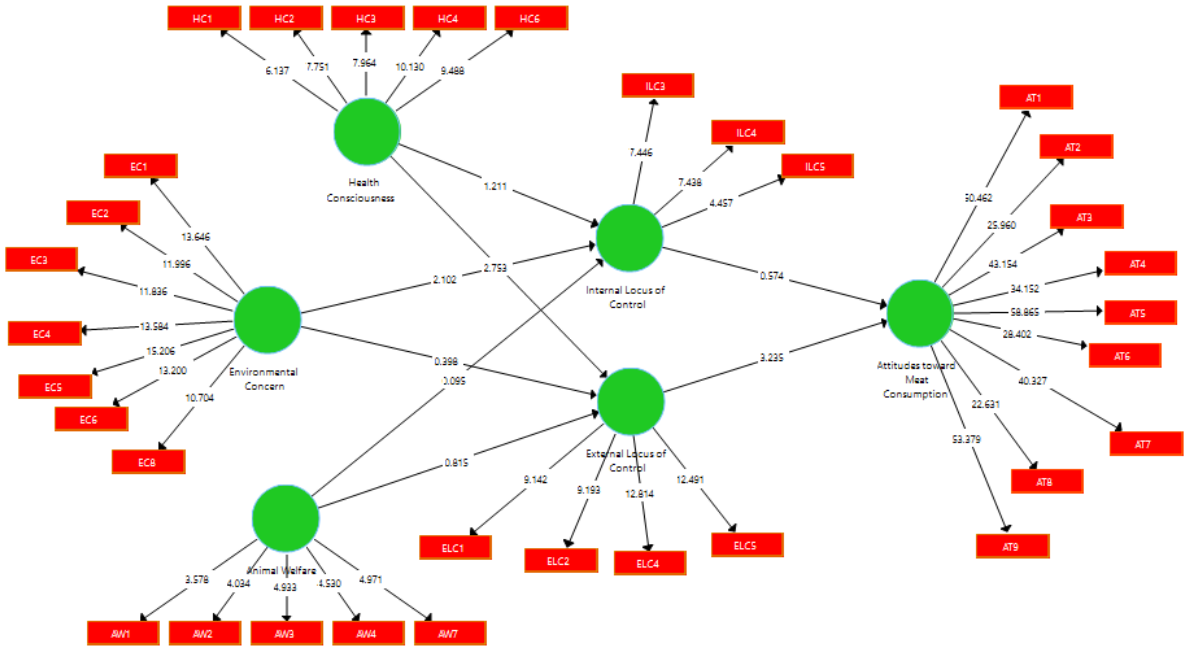
H8: There is a positive relationship between external locus of control and attitudes towards meat consumption.

External locus of control and attitudes towards meat consumption, as per *table 9* above, have the highest significance in comparison to all the other relationships proposed within this study. This relationship possesses a T-statistic of 3.249 and a P-value of 0.001 which both surpass the required thresholds. This implies that this relationship is strongly supported and it is highly significant, while it occupies the title of the most significant relationship of all the relationships proposed as per the conceptual model. This insinuates that consumers that have an external locus of control are more likely to have a positive attitude toward meat consumption.

Diagrammatic Illustration of the Structural Model (Path Model) and Summary of results

Figure 6 below illustrates the structural model used after running the bootstrapping method to assess the significance levels. This is followed by a synopsis of the results achieved through hypotheses testing.

Figure 6 – Structural (Path) Model



A summary of the hypotheses results is presented below.

Summary of Hypothesis Testing Results

Hypothesised Relationship	Hypothesis	Path Coefficient	T-Statistic	P-value	Outcome
Health consciousness → Internal Locus of Control	H1	0.119	1.17	0.242	Supported but not significant
Health consciousness → External Locus of Control	H2	-0.23	2.85	0.005	Supported and significant
Environmental Concern → Internal Locus of Control	H3	0.23	2.215	0.027	Supported and significant
Environmental Concern → External Locus of Control	H4	-0.42	0.408	0.683	Supported but not significant
Animal Welfare → Internal Locus of Control	H5	-0.009	0.084	0.933	Not supported and not significant
Animal Welfare → External Locus of Control	H6	-0.078	0.748	0.455	Supported but not significant
Internal Locus of Control → Attitudes toward Meat Consumption	H7	-0.058	0.531	0.595	Not supported and not significant
External Locus of Control → Attitudes toward Meat Consumption	H8	0.242	3.249	0.001	Supported and significant

5.7 Testing for Mediation

5.7.1 Path coefficient values of mediation effect

The research conceptual model used in this study made use of two mediating variables. These two mediator variables mediated the relationship between three predictor variables and one outcome variable, namely health consciousness, environmental concern and animal welfare as the predictor (independent) variables and attitudes toward meat consumption as the outcome variable. The two mediators are referred to as internal locus of control and external locus of control. The following section demonstrates the results for the mediation effect in an attempt to establish whether the mediating variables positively or negatively mediate the relationship between the independent and the outcome variable. This was ascertained by means of the 'consistent PLS bootstrapping' using SmartPLS 3 statistical software.

The following hypotheses are proposed as per the mediation effect:

H9: External locus of control positively mediates the relationship between animal welfare and attitude toward meat consumption

H10: External locus of control positively mediates the relationship between environmental concern and attitude toward meat consumption

H11: External locus of control positively mediates the relationship between health consciousness and attitude toward meat consumption

H12: Internal locus of control positively mediates the relationship between animal welfare and attitude toward meat consumption

H13: Internal locus of control positively mediates the relationship between environmental concern and attitude toward meat consumption

H14: Internal locus of control positively mediates the relationship between health consciousness and attitude toward meat consumption

Table 10: Path Coefficient values of the mediation effect

	Specific Indirect Effects
Animal welfare -> External locus of control -> Attitude towards meat consumption	-0.018
Environmental Concern-> External locus of control -> Attitude towards meat consumption	-0.011
Health consciousness -> External locus of control-> Attitude towards meat consumption	-0.082
Animal welfare -> Internal locus of control -> Attitude towards meat consumption	0.001
Environmental concern -> Internal locus of control -> Attitude towards meat consumption	-0.004
Health consciousness -> Internal locus of control -> Attitude towards meat consumption	-0.002

As shown in *table 10* above, the relationship between animal welfare and attitude toward meat consumption, mediated by external locus of control has a path coefficient value of -0.018. Accordingly, the external locus of control mediator in this case negatively mediates the relationship between animal welfare and attitude toward meat consumption and hence it can be confirmed that external locus of control does not mediate the relationship between animal welfare and attitude toward meat consumption. Thus, H9 is not supported.

Moreover, *table 10* above indicates that the relationship between environmental concern and attitude toward meat consumption, as mediated by external locus of control, also has a negative path coefficient of -0.011. This value is small, however it is negative and therefore it is confirmed that external locus of control does not mediate the relationship between environmental concern (predictor) and attitude towards meat consumption (outcome). Deducing from the above, H10 is not supported.

Health consciousness and attitude toward meat consumption was also mediated by external locus of control where a path coefficient value for this indirect effect is -0.082. Not only is this a negative value, but it is a substantially larger figure than that of the other two predictors mediated by external locus of control. This confirms that external locus of control does not

mediate the relationship between health consciousness (predictor) and attitude toward meat consumption (outcome) and hence, H11 is not supported.

As illustrated in *table 10* above the second mediator variable, internal locus of control, mediates the relationship between animal welfare (predictor) and attitude toward meat consumption. This indirect effect achieved a path coefficient of 0.001. Although this is a very small number, it is positive and this therefore confirms internal locus of control does in fact mediate the relationship between animal welfare and attitude toward meat consumption. Therefore, H12 is supported.

Internal locus of control also mediated the relationship between environmental concern and attitude toward meat consumption where a path coefficient value of -0.004 for this indirect relationship. This value is negative however it is marginally negative as compared to the external locus of control mediator for this very same relationship. Although H13 is not supported, it can still be assumed (based on the path coefficient values) that internal locus of control better mediates the relationship between environmental concern and attitude toward meat consumption.

Lastly, *table 10* above shows the path coefficient values for the relationship between health consciousness and attitude towards meat environment, as mediated by internal locus of control. This value is -0.002 which is also a slightly negative value. Therefore internal locus of control does not effectively mediate the relationship between health consciousness (predictor) and attitude toward meat consumption (outcome). Hence, H14 is not supported however based on the path coefficient values demonstrated above, it may be assumed that internal locus of control has a greater mediation effect on consumer health consciousness and attitude toward meat consumption than external locus of control.

5.7.2 Significance of the Mediation Effect

SmartPLS 3 offers a 'consistent PLS bootstrapping' algorithm that allows for the T-statistics and P-values to be generated to determine whether the mediating variables significantly mediate the relationships between the independent predictor variables (animal welfare, environmental concern and health consciousness) and the dependent outcome variable (attitude toward meat consumption).

According to Gye-Soo (2016), the key thresholds to be met, that imply a significant relationship are: **T-value must be equal to or greater than 1.96 and P-value less than 0.05.** Both the T-statistic and the P-value are expected to be met simultaneously to indicate a definite existence

of the proposed relationships. *Table 11* below shows the T-statistics and P-values of the mediated relationships.

Table 11: T-statistics and P-values of the mediated relationships

	T Statistics (|O/STDEV|)	**P Values**
AW -> ILC -> AT	0.051	0.959
EC -> ELC -> AT	0.363	0.717
HC -> ILC -> AT	0.481	0.631
EC -> ILC -> AT	0.634	0.526
AW -> ELC -> AT	0.668	0.504
HC -> ELC -> AT	1.968	0.05

Key: AW: Animal Welfare; ILC: Internal Locus of Control; AT: Attitudes toward Meat Consumption; EC: Environmental Concern; ELC: External Locus of Control; HC: Health Consciousness

As per the results presented in *table 11* above, it was found that internal locus of control does not significantly mediate the relationship between animal welfare and attitudes toward meat consumption. This results in partial mediation for this relationship. This is evident by the T-statistic of 0.051 and P-value of 0.959. Similarly, external locus of control as the mediator between environmental concern and attitudes toward meat consumption also reflected as being not significant with a T-statistic of 0.363 and a P-value of 0.717. The relationship between health consciousness and attitude toward meat consumption was concluded as being partially mediated by internal locus of control, as shown by the T-statistic of 0.481 and P-value of 0.631 which do not meet the threshold requirements.

Furthermore, environmental concern and attitude toward meat consumption as mediated by internal locus of control obtained a T-statistic of 0.634 and a P-value of 0.526. This indicates that internal locus of control does not significantly mediate the relationship between these predictor and outcome variables and that there is partial mediation. In a similar vein, animal welfare and attitude toward meat consumption, mediated by external locus of control achieved a T-statistic of 0.668 and a P-value of 0.504, implying that the threshold was not met and

external locus of control also did not significantly mediate the relationship between these two predictor and outcome variables and that there is partial mediation.

Contrary to the above, *table 11* demonstrates that health consciousness and attitude toward meat consumption with the mediator variable of external locus of control had a T-statistic of 1.968 and a P-value of 0.05. This is the only mediated relationship that obtained a significant mediation effect. Although the T-statistic (1.968) meets the required threshold and the P-value is not below the threshold of 0.05 but it is equal to 0.05, it is concluded that the mediation effect of external locus of control on health consciousness and attitude toward meat consumption is significant. A summary of the mediation effect results are presented below.

Hypothesised Relationship	**Hypothesis**	**Path Coefficient**	**T-Statistic**	**P-value**	**Outcome**
Animal welfare → External Locus of Control → Attitude toward Meat Consumption	H9	-0.018	0.668	0.504	Not supported and not significant
Environmental concern → External Locus of Control → Attitude toward Meat Consumption	H10	-0.011	0.363	0.717	Not supported and not significant
Health consciousness → External Locus of Control → Attitude toward Meat Consumption	H11	-0.082	1.968	0.05	Not supported but significant
Animal welfare → Internal Locus of Control → Attitude toward Meat Consumption	H12	0.001	0.051	0.959	Supported but not significant
Environmental concern → Internal Locus of Control → Attitude toward Meat Consumption	H13	-0.004	0.634	0.526	Not supported and not significant

Health consciousness → Internal Locus of Control → Attitude toward Meat Consumption	H14	-0.002	0.481	0.631	Not supported and not significant

Summary

This chapter began by illustrating and discussing the descriptive statistics of the study, along with the frequency profiling of all the instruments used as per the study. The chapter then went on to analyse the data by means of Structural Equation Modeling (SEM), which began with reliability and validity testing of the measurement model. This then progressed to an analysis of the structural model whereby the various hypotheses of the study were testing to determine whether they are supported and significant or not. Lastly, mediation testing was undertaken by means of SmartPLS 3 statistical software to identify whether the mediating variables are in fact mediating the various relationships between the three predictor variables and the outcome variable. The T-statistics and the P-values of the mediation effect were also analysed to determine whether any of the relationships were significantly mediated (partial mediation or full mediation).

The next chapter seeks to complete this study by providing relevant conclusions and recommendations.

CHAPTER SIX: CONCLUSION AND DISCUSSION

This chapter serves to provide the conclusive remarks of the study as well as to touch on the marketing implications of the results ascertained in the previous chapter as well as the potential limitations of this study and areas for future research.

6.1 Summary of hypotheses results

Hypothesised Relationship	Hypothesis	Outcome
Health consciousness → Internal Locus of Control	H1	Supported but not significant
Health consciousness → External Locus of Control	H2	Supported and significant
Environmental Concern → Internal Locus of Control	H3	Supported and significant
Environmental Concern → External Locus of Control	H4	Supported but not significant
Animal Welfare → Internal Locus of Control	H5	Not supported and not significant
Animal Welfare → External Locus of Control	H6	Supported but not significant
Internal Locus of Control → Attitude toward Meat Consumption	H7	Not supported and not significant
External Locus of Control → Attitude toward Meat Consumption	H8	Supported and significant

External locus of control and attitude toward meat consumption (H8)

As confirmed in chapter 5 and highlighted in the summary of results table above, one of the most prominent relationships was that of H8 (external locus of control and attitudes toward meat consumption). This finding is in line with a study conducted by Torkestani, Dehqanan and Borujerdi (2015). As a result, we can confirm that if a consumer encompasses a more

external locus of control, they will likely have a positive attitude toward meat consumption. This finding is logically sound in that if a consumer feels that they have little control over happenings in their own life and that external forces assume control (external locus of control), then it is likely that they will feel that if they do not consume meat products this will have no impact on the negative effects it may have on factors such as the environment, health and animal welfare. Hence, they will assume a positive attitude toward meat consumption. Furthermore, occupying an external locus of control would result in consumers' viewing all happenings as a result of luck, chance, fate and the influence of others as opposed to them assuming control. For example, one with a more external locus of control could argue that whether they reduce their meat consumption or not, the negative impact that stems from meat consumption (greenhouse gasses, water scarcity, soil erosion etc) will still occur as it would be believed that it is not in their control, but rather in the hands of others. This insight could prove to be valuable to marketers of meat substitute products (for example) as they can tailor marketing strategies to emphasise the potential control that each individual does have over meat related issues such as health and ecological concern. This would ultimately encourage those reluctant consumers to better identify value within these meat substitute products. The relationship between external locus of control and attitudes toward meat consumption is statistically deemed as the strongest and most significant relationship of the study.

Health consciousness and external locus of control (H2)

As shown in the table above, this relationship (H2) is both supported and significant stating that a consumer's level of health consciousness will negatively relate with external locus of control. In a similar vein, this negative relationship also insinuates that individuals that occupy a mor external locus of control may not be very health conscious. In other words, a consumer that regards themselves as being highly health conscious will ultimately not occupy an external locus of control as they will be of the view that their health is in their own control (i.e. diet and exercise) rather than a result of luck or fate. This is in line with the view of Stapleton and Smith (2013) as well as Helmer, Kramer and Mikolajczyk (2012). This provides numerous implications for marketers of health enhancing product and services in that they can appeal to the control that a consumer has over their health to encourage them to utilise certain products that will allow the consumer to take their health into their own hands. In a meat related context, marketers are able to relate various characteristics of meat to the potential impact this has on an individual's health if they choose to consume it, either in a positive or negative manner (i.e. to encourage them to either increase or decrease their meat consumption).

Environmental concern and internal locus of control (H3)

The third noticeable relationship is between environmental concern and internal locus of control (H3). The summary table above indicates that this relationship is both significant and supported. It is postulated that there is a positive relationship between environmental concern and internal locus of control. This is in accordance with the view of Asghar and Nazneen (2016) who found that individuals who occupy a more internal locus of control are more motivated to undertake pro-environmental actions. This implies that consumers are likely to feel that their actions have a direct impact on the environment's wellbeing and that it is ultimately in their own control. This is a key insight for marketers of green products as they are able to invoke emotion through various marketing touchpoints to highlight the negative impact that we as consumers have on the environment through our consumption practices. They can then pose their product and services as alternatives to current environmentally harmful products as a means to environmental preservation.

Marketers of both meat and meat substitute products can benefit from this finding. Marketers of meat can appeal to consumers' concern for the environment by ensuring they are transparent and that they take proactive measures in the entire product life cycle process to reduce the impact on the environment. Marketers of meat substitute products can also benefit from this insight in that they can appeal to the idea that consumers have a direct impact on the environment through our consumption patterns and by using their meat substitute product, consumers would be taking the environmental well-being into their own hands.

The three relationships discussed above are statistically regarded as the most significant of all the various relationships proposed in this study. The remainder of the postulated relationships were statistically deemed to be not significant as discussed in the previous chapter and illustrated in the summary table above. However, some of these insignificant relationships were still supported and will be discussed below.

Health consciousness and internal locus of control (H1)

The relationship between health consciousness and internal locus of control was found to be supported. However, this relationship is not significant as per this study. Therefore, although there is a positive relationship between health consciousness levels of consumers and internal locus of control, this relationship is not substantial. Therefore it is recommended that marketers

do not assume that consumers who are classified as health conscious will always have an internal locus of control or vice versa.

Environmental concern and external locus of control (H4)

As demonstrated in the table above, this relationship was also found to be supported but not significant. This relationship was postulated as being negative. On the basis that this relationship is supported, it can be argued that those consumers who occupy a high levels of environmental concern will likely not have an external locus of control. However, this relationship was not found to be significant and hence it is a weak relationship.

Animal welfare and internal locus of control (H5)

In contrast to the relationships already discussed in this chapter, the relationship between animal welfare and internal locus of control was concluded as being both not supported and not significant. This relationship was hypothesised as being positive. Based on the findings, it is argued that consumer's that have a high animal welfare score do not feel like the consequences of poor animal welfare are in their own personal control and hence there is no positive correlation between the two variables. Marketers of meat substitute products can utilise this finding to ensure that they do not position their potential marketing messages in such a way that consumers feel that they have to take individual responsibility for poor animal welfare in society. Rather, these marketers of meat substitute products can position themselves in opposition to the external forces at play and powerful others that affect the wellbeing of animals, such as the commercial meat industry and farms. This will allow marketers to persuade consumer's to purchase their product based on not supporting these external forces and poor animal welfare practice that is not directly in the consumers' control. For example, a large motivation for the vegan movement stems from the poor animal welfare practice within the meat production facilities and how it is done so in an 'inhumane' manner.

Animal welfare and external locus of control (H6)

In relation to the above discussion concerning H5, this relationship between animal welfare and external locus of control was found to be supported. However, this relationship (although supported) was found not to be significant. The relationship was postulated to be negative, where these findings insinuate that consumers' animal welfare interests do in fact possess a negative relationship with external locus of control, but this correlation is not very strong. The fact that the relationship is not significant somewhat support the findings of H5 (animal welfare

and internal locus of control), where consumer's feel that animal welfare may in some way be in their control, but it is very much so in an indirect manner as they personally cannot stop the commercial industry from farming animals and keeping animals in the conditions that they are kept.

Internal locus of control and attitude toward meat consumption (H7)

This relationship, as shown in the table above, is both unsupported and not significant. This relationship between internal locus of control and attitude towards meat consumption was proposed as being a positive relationship, but the findings of this study prove otherwise. The relationship is evidently negative which provides marketers with valuable insight. This finding elucidates that if consumers have an internal locus of control they actually do not have a positive attitude toward meat consumption, but rather they are likely to have a more negative attitude toward meat consumption in the context of this study. In other words, those that feel like they are more in control of the happenings in their life may inherently have an increased reluctance toward meat consumption (due to the various implications that they believe, such as the impact of meat consumption on personal health and/or on the environment).

Marketers of meat substitute products and meat products could use these insights to target consumers in a way where they are assured control. Such as eating a specific type of meat to take control of their health (for example a lean cut of meat), or supporting free-range farming (i.e., Woolworths free-range products) to take their health into their own control by not consuming meat that contains various hormones and antibiotics.

The following sections will discuss the conclusions of the mediation effect.

6.2 Conclusive remarks pertaining to the mediation effect

Hypothesised Relationship	Hypothesis	Outcome
Animal welfare → External Locus of Control → Attitude toward Meat Consumption	H9	Not supported and not significant
Environmental concern → External Locus of Control → Attitude toward Meat Consumption	H10	Not supported and not significant
Health consciousness → External Locus of Control → Attitude toward Meat Consumption	H11	Not supported but significant
Animal welfare → Internal Locus of Control → Attitude toward Meat Consumption	H12	Supported but not significant
Environmental concern → Internal Locus of Control → Attitude toward Meat Consumption	H13	Not supported and not significant
Health consciousness → Internal Locus of Control → Attitude toward Meat Consumption	H14	Not supported and not significant

This study adopted two interrelated mediators that ultimately mediated the relationship between health consciousness, environmental concern, animal welfare and consumers' attitude toward meat consumption.

The table above shows that the only relationship with a positive mediation effect was animal welfare and attitude toward meat consumption, as mediated by internal locus of control (H12). Although this relationship was deemed to be positive and supported, the findings show that the relationship is not significant. Thus, it is concluded that internal locus of control does mediate the relationship between animal welfare and attitude toward meat consumption.

The remainder of the mediating relationships for both external locus of control and internal locus of control are not supported, hence it may be concluded that external locus of control and internal locus of control does not mediate these relationships (other than H12 as aforementioned).

These findings pave way for future research endeavours. The contributions of the study as well as the limitations and areas for future research will be discussed next.

6.3 Contributions

This study gathered various insights and implications that make positive contributions to academics and marketers. This study used a quantitative approach to explore health consciousness, environmental concern and animal welfare as key predictors of consumers' locus of control and attitudes towards meat consumption within the Generation Y cohort of university students. In order to progress with the study, the researcher identified various objectives and research questions whereby a number of hypotheses statements were postulated and ultimately tested. Through the various hypotheses testing methods, each hypothesis was analysed to determine whether they were supported or not. These findings allow this study to contribute to the existing body of knowledge concerning meat and meat consumption.

This study adopted an entirely unique focus where extremely few studies have been undertaken to assess consumers' attitude toward meat consumption, especially where double mediated by internal and external locus of control. This is a completely unique contribution to the existing body of knowledge. Additionally, this study made significant contributions in the sense that the both the Theory of Consumption Values and the Cognitive Dissonance Theory were used to underpin the study as key prognostic theory.

This study also made used of a completely unique and distinctive conceptual framework which directly contributes value by adding to, and potentially expanding on, what has currently been learned by previous research.

There is a growing need for marketing research to link theory with practice. This study contributes to the practice of marketing through the new and unique inferences provided. Marketing practitioners are able to use these inferences and insights to ultimately tailor marketing strategies as well as to make more informed decisions pertaining to the focus and/or context of this study.

6.4 Limitations and Future Research

This study presented various insights concerning meat consumption and effect that other elements may have on one's attitude towards meat consumption. However, this study has a number of limitations that serve to inform future research endeavours. One of the more obvious limitations revolves upon the sample used as per this study. This study conducted research of

university students that belonged to the Generation Y cohort where the results may not be generalised to the other various cohorts. Thus, future research should take other cohorts of the population into consideration afwhen looking to attitude toward meat consumption.

This study undertook a quantitative approach where the nature of this research may be something that is more subjective. Therefore, future research may consider using a qualitative approach or a mixed method approach that is inclusive of both a qualitative and quantitative research method.

A more prominent limitation looks toward the model and the variables used as per the conceptual framework. Health consciousness is an intricate, complex topic in its own right and hence it has many facets that may not have been included in the study. Contextually, if we are to look towards meat consumption and health consciousness, avenues such as the types of meat would provide additional value. This study did not classify meat into the various types that are available. This poses as a limitation in that the type of meat that is consumed would have varying effects on human health. For example, red meat being high in fat as compared to white meat.

Lastly, this study explored the element of locus of control. Locus of control can either be more internal, more external, or a combination of both. Internal locus of control and external locus of control were used as mediating variables between the predictors and the outcome variable. After testing for mediation, it was found that these mediators are not supported in the study context (not including H12). Therefore, future research may consider adding to the dearth of literature on locus of control by incorporating it as more of a moderator as opposed to a mediator. This will provide unique insight.

The limitations outlined in this study served to identify and contribute to future avenues of research and not to encumber the value within the findings of this research study.

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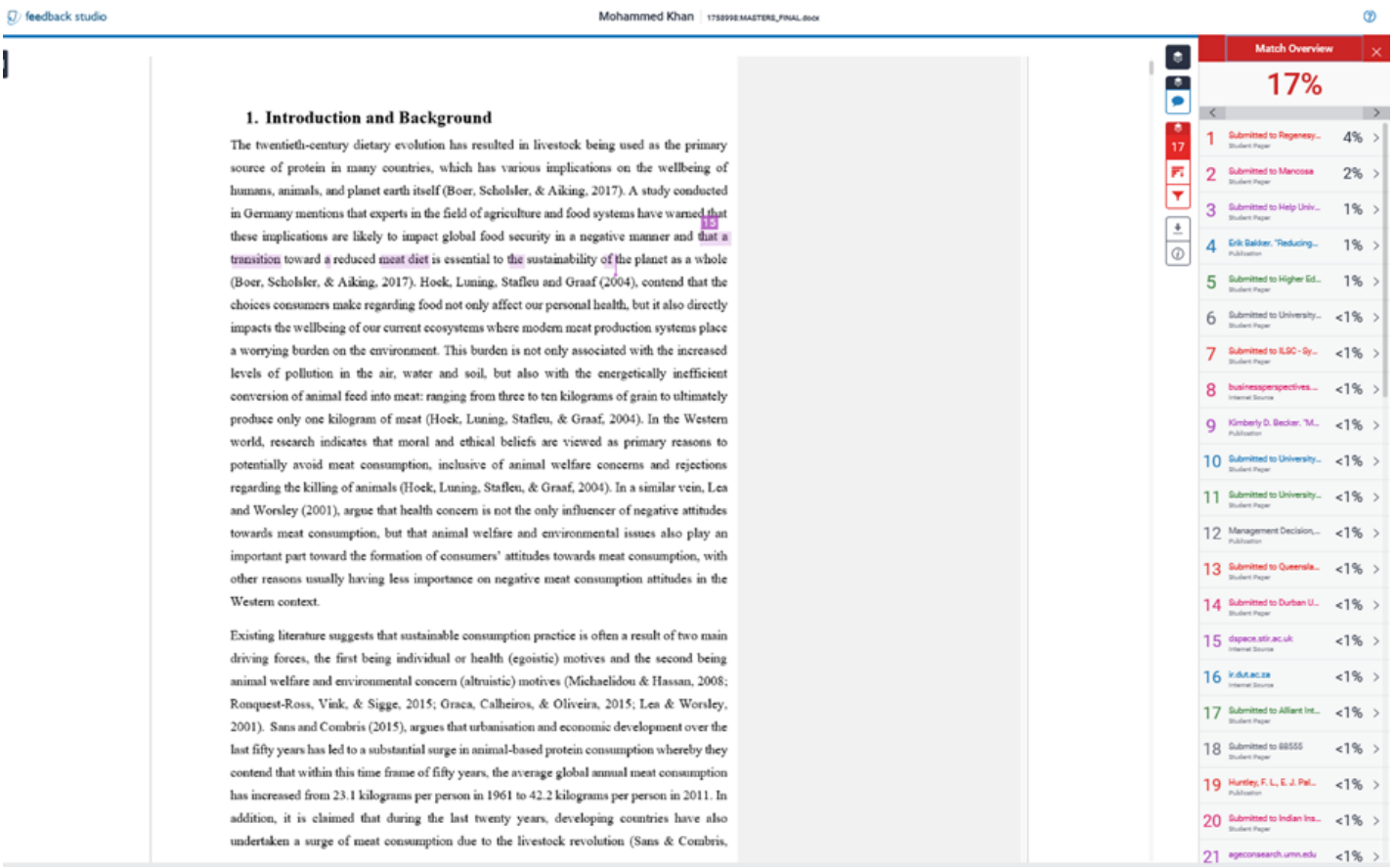
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feedback studio
Mohammed Khan
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1. Introduction and Background
The twentieth-century dietary evolution has resulted in livestock being used as the primary source of protein in many countries, which has various implications on the wellbeing of humans, animals, and planet earth itself (Boer, Scholsler, & Aiking, 2017). A study conducted in Germany mentions that experts in the field of agriculture and food systems have warned that these implications are likely to impact global food security in a negative manner and that a transition toward a reduced meat diet is essential to the sustainability of the planet as a whole (Boer, Scholsler, & Aiking, 2017). Hoek, Luning, Stafleu and Graaf (2004), contend that the choices consumers make regarding food not only affect our personal health, but it also directly impacts the wellbeing of our current ecosystems where modern meat production systems place a worrying burden on the environment. This burden is not only associated with the increased levels of pollution in the air, water and soil, but also with the energetically inefficient conversion of animal feed into meat: ranging from three to ten kilograms of grain to ultimately produce only one kilogram of meat (Hoek, Luning, Stafleu, & Graaf, 2004). In the Western world, research indicates that moral and ethical beliefs are viewed as primary reasons to potentially avoid meat consumption, inclusive of animal welfare concerns and rejections regarding the killing of animals (Hoek, Luning, Stafleu, & Graaf, 2004). In a similar vein, Lea and Worsley (2001), argue that health concern is not the only influencer of negative attitudes towards meat consumption, but that animal welfare and environmental issues also play an important part toward the formation of consumers' attitudes towards meat consumption, with other rensons usually having less importance on negative meat consumption attitudes in the Western context.
Existing literature suggests that sustainable consumption practice is often a result of two main driving forces, the first being individual or health (egoistic) motives and the second being animal welfare and environmental concern (altruistic) motives (Michaelidou & Hassan, 2008; Ronquest-Ross, Vink, & Sigge, 2015; Graca, Calheiros, & Oliveira, 2015; Lea & Worsley, 2001). Sans and Combris (2015), argues that urbanisation and economic development over the last fifty years has led to a substantial surge in animal-based protein consumption whereby they contend that within this time frame of fifty years, the average global annual meat consumption has increased from 23.1 kilograms per person in 1961 to 42.2 kilograms per person in 2011. In addition, it is claimed that during the last twenty years, developing countries have also undertaken a surge of meat consumption due to the livestock revolution (Sans & Combris,
Match Overview
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1 Submitted to Regenesy... 4%
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3 Submitted to Help Univ... 1%
4 Erik Bakker, "Reducing... 1%
5 Submitted to Higher Ed... 1%
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9 Kimberly D. Becker, "M... <1%
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Division of Marketing in the School of Economics and Business Sciences

Date: June 2018

Good Day

My name is Mohammed Khan and I am a Masters student (Mcom) in the division of marketing at the University of the Witwatersrand, Johannesburg. I am conducting research on health consciousness, environmental concern and animal welfare as key prognosticators of consumers' locus of control and attitudes towards meat consumption: A case of the Generation Y cohort, in South Africa. Locus of control refers to the extent to which a person may feel that they have control over consequences of behavior. Internal Locus of Control refers to the idea that the outcomes of our actions are heavily reliant on our own behavior. Whereas, External Locus of Control is based on the idea that the consequences of one's actions are guided by events and happenings that are not in the individuals' control. Attitudes towards meat consumption refers to a mental state of readiness that is prearranged by experience and has a direct influence on an individuals' response to all situations and objects, concerning meat consumption, to which this individual is related to.

The SEBS Ethics Committee (Non-Medical), Protocol Number: CBUSE/1379 approved the research. As someone who would be involved in the purchasing and consumption of meat products, you are invited to take part in this survey. The purpose of this survey is to assess health consciousness, environmental concern and animal welfare as key predictors of consumers' locus of control and attitudes towards meat consumption.

Your response is highly valued and there are no right or wrong answers. This survey is both confidential and anonymous. Anonymity and confidentiality are guaranteed by not needing to enter your name on the questionnaire. Your participation is completely voluntary and involves no risk, penalty or loss of benefits whether you participate or not. You may withdraw from the survey at any stage.

Section A of this survey captures some demographic data, please cross (X) whichever boxes are applicable to you. Section B, C, D, E, F and G captures the various research variables used in the study: health consciousness, environmental concern, animal welfare concern, internal locus of control, external locus of control, attitudes towards meat consumption, and will be comprised of 45 statements. Please cross (X) the box that you feel is most appropriate for each statement. The entire survey should take approximately 10 minutes to complete.

Thank you for considering participation. Should you have any queries, or should you wish to obtain a copy of the results of the survey, please contact me.
My contact details: 1758998@students.wits.ac.za – Cell number: 076 687 0714
My supervisors name and email: Dr Norman Chiliya – Norman.Chiliya@wits.ac.za

Kind regards
Mohammed Khan
Masters Student: Divison of Marketing
School of Economic and Business Sciences
University of the Witwatersrand, Johannesburg

SECTION A

GENERAL INFORMATION

Please indicate your answer by crossing (X) on the appropriate box.

A1 Please indicate your Age:

18-21		22-25		26-30	

A2 Gender:

Male	
Female	
Prefer not to say	

A3 Marital Status:

Single	
Married	
Other	

A4 Indicate your level of study:

1st Year	
2nd Year	
3rd Year	
4th Year	
Postgraduate	

A5 What is your average monthly allowance/income?

Less than R500	
R500-R2000	
R2001-R5000	
R5001-R10 000	
More than R10 000	

A6 Which description best fits your level of meat consumption?

Omnivore/meat-eater ("I eat meat almost every day")	
Flexitarian/semi-vegetarian ("I actively reduce meat from my diet, but still occasionally eat meat")	
Vegetarian/vegan ("I completely avoid some or all animal-derived products")	

SECTION B

Health Consciousness

Below are statements about health consciousness, you can indicate the extent to which you agree or disagree with the statement by crossing (X) the corresponding number in the 5-point scale below:
1=strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree
Please mark only one number for each statement

HC1	I have the impression that I sacrifice a lot for my health.	Strongly disagree	1	2	3	4	5	Strongly agree
HC2	I consider myself very health conscious.	Strongly disagree	1	2	3	4	5	Strongly agree
HC3	I am prepared to leave a lot, to eat as healthy as possible.	Strongly disagree	1	2	3	4	5	Strongly agree
HC4	I think that I take health into account a lot in my life.	Strongly disagree	1	2	3	4	5	Strongly agree
HC5	I think it is important to know well how to eat healthy.	Strongly disagree	1	2	3	4	5	Strongly agree
HC6	My health is so valuable to me that I am prepared to sacrifice many things for it.	Strongly disagree	1	2	3	4	5	Strongly agree
HC7	I have the impression that other people pay more attention to their heath than I do.	Strongly disagree	1	2	3	4	5	Strongly agree
HC8	I do not continually ask myself whether something is good for me.	Strongly disagree	1	2	3	4	5	Strongly agree

HC9	I really do not think often about whether everything I do is healthy.	Strongly disagree	1	2	3	4	5	Strongly agree
HC10	I do not want to ask myself all the time whether the things I eat are good for me.	Strongly disagree	1	2	3	4	5	Strongly agree

SECTION C
Environmental Concern

Below are statements about environmental concern, you can indicate the extent to which you agree or disagree with the statement by crossing (X) the corresponding number in the 5-point scale below:
1=strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree
Please mark only one number for each statement

EC1	Meat consumption has a negative impact on the environment.	Strongly disagree	1	2	3	4	5	Strongly agree
EC2	Meat consumption is not environmentally friendly.	Strongly disagree	1	2	3	4	5	Strongly agree
EC3	Meat consumption pollutes the environment.	Strongly disagree	1	2	3	4	5	Strongly agree
EC4	Meat consumption can harm the environment.	Strongly disagree	1	2	3	4	5	Strongly agree
EC5	I consider the effect that meat consumption has on the environment when making purchases.	Strongly disagree	1	2	3	4	5	Strongly agree
EC6	If a product is eco-labelled (e.g. an environmentally friendly label/free range label), this would influence my choice of purchase.	Strongly disagree	1	2	3	4	5	Strongly agree
EC7	I consider meat consumption okay from an environmental point of view.	Strongly disagree	1	2	3	4	5	Strongly agree
EC8	I consider buying environmentally friendly products that are available in the market.	Strongly disagree	1	2	3	4	5	Strongly agree

SECTION D
Animal Welfare

Below are statements about animal welfare, you can indicate the extent to which you agree or disagree with the statement by crossing (X) the corresponding number in the 5-point scale below:
1=strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree
Please mark only one number for each statement

AW1	I cannot bear the sight of dead animals.	Strongly disagree	1	2	3	4	5	Strongly agree
AW2	If I am going to eat meat products, I would at least rather not be able to see that it was once a living animal.	Strongly disagree	1	2	3	4	5	Strongly agree
AW3	I find raw meat sickening.	Strongly disagree	1	2	3	4	5	Strongly agree
AW4	I avoid eating meat as much as possible because it means that an animal must be killed.	Strongly disagree	1	2	3	4	5	Strongly agree
AW5	I find meat from factory farming ok.	Strongly disagree	1	2	3	4	5	Strongly agree
AW6	To be honest, I do not think much about animal welfare.	Strongly disagree	1	2	3	4	5	Strongly agree
AW7	I have often thought about eating less meat because I feel so sorry for the animals.	Strongly disagree	1	2	3	4	5	Strongly agree
AW8	Animals should be kept in accordance with their natural needs.	Strongly disagree	1	2	3	4	5	Strongly agree

SECTION E
Internal Locus of Control

Below are statements about internal locus of control, you can indicate the extent to which you agree or disagree with the statement by crossing (X) the corresponding number in the 5-point scale below:
1=strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree
Please mark only one number for each statement

ILC1	What happens to me is my own doing.	Strongly disagree	1	2	3	4	5	Strongly agree
ILC2	It is difficult for me to believe that chance or luck plays an important role in my life.	Strongly disagree	1	2	3	4	5	Strongly agree

ILC3	Becoming a success is a matter of hard work, luck has little or nothing to do with it.	Strongly disagree	1	2	3	4	5	Strongly agree
ILC4	There really is no such thing as 'luck'.	Strongly disagree	1	2	3	4	5	Strongly agree
ILC5	In my case getting what I want has little or nothing to do with luck.	Strongly disagree	1	2	3	4	5	Strongly agree

SECTION F
External Locus of Control

Below are statements about external locus of control, you can indicate the extent to which you agree or disagree with the statement by crossing (X) the corresponding number in the 5-point scale below:
1=strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree
Please mark only one number for each statement

ELC1	Sometimes I feel that I don't have enough control over the direction my life is taking.	Strongly disagree	1	2	3	4	5	Strongly agree
ELC2	Many times, I feel that I have little influence over the things that happen to me.	Strongly disagree	1	2	3	4	5	Strongly agree
ELC3	Getting a good job depends mainly on being in the right place at the right time.	Strongly disagree	1	2	3	4	5	Strongly agree
ELC4	Most people do not realise how much their lives are controlled by accidental happenings.	Strongly disagree	1	2	3	4	5	Strongly agree
ELC5	Majority of the time we might as well decide what to do by flipping a coin.	Strongly disagree	1	2	3	4	5	Strongly agree

SECTION G
Attitudes towards meat consumption

Below are statements about attitudes towards meat consumption, you can indicate the extent to which you agree or disagree with the statement by crossing (X) the corresponding number in the 5 point scale below:

1=strongly disagree 2= disagree 3= neutral 4= agree 5= strongly agree
Please mark only one number for each statement

AT1	It is important to me that I consume meat products.	Strongly disagree	1	2	3	4	5	Strongly agree
AT2	Meat products are safe to consume.	Strongly disagree	1	2	3	4	5	Strongly agree
AT3	If I can choose between meat products and non-meat products, I prefer a meat product.	Strongly disagree	1	2	3	4	5	Strongly agree
AT4	Meat products are the main things I look for when making food purchases.	Strongly disagree	1	2	3	4	5	Strongly agree
AT5	Meat products are appealing to me.	Strongly disagree	1	2	3	4	5	Strongly agree
AT6	Eating meat is good for my well-being.	Strongly disagree	1	2	3	4	5	Strongly agree
AT7	Meat products are of a high quality.	Strongly disagree	1	2	3	4	5	Strongly agree
AT8	Consuming meat products provide me with good value for money.	Strongly disagree	1	2	3	4	5	Strongly agree
AT9	Overall, I have a favourable attitude towards meat consumption.	Strongly disagree	1	2	3	4	5	Strongly agree

THE END – THANK YOU!

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CLEARANCE CERTIFICATE **PROTOCOL NUMBER: CBUSE/1379**

PROJECT: **HEALTH CONSCIOUSNESS, ENVIRONMENTAL CONCERN AND ANIMAL WELFARE AS KEY PREDICTORS OF CONSUMERS' LOCUS OF CONTROL AND ATTITUDES TOWARDS MEAT CONSUMPTION: A CASE OF THE GENERATION Y COHORT, IN SOUTH AFRICA**

INVESTIGATOR: Mohammed Khan

STUDENT NUMBER: 1758998

SCHOOL: SEBS

DATE CONSIDERED: 04 June 2018

DECISION OF THE ETHICS COMMITTEE: Approved

NOTE

Unless otherwise specified this ethics clearance is valid for 1 year and may be renewed upon application.
Please remember to include the protocol number above to your participation letter.

DATE: 12/07/2018 **CHAIRPERSON:** Jean-Marie Bancilhon

cc: Supervisor:

Eugine Mazviri

SCHOOL OF ECONOMIC & BUSINESS SCIENCES